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ABSTRACT

A comprehensive view of matters related to future curricula, programs, and services of Montgomery College is provided in this report. Emphasis is placed on the unmet program needs in the down-county area of Montgomery County. The 10 chapters of the report are: I. Summary, Conclusions, and Recommendations (the key portion of the report); II. Characteristics and Forecasts of the Population; III. Structure of the Economy and Forecasts of Employment and Manpower Requirements; IV. Middle Manpower Education for the 1970's; V. Community College Education in Montgomery County and Educational Offerings Provided by Other Selected Agencies; VI. Information from Community Leaders and Other Citizens; VII. Study of Parents of Fifth Grade Students; VIII. Information from High School Seniors; IX. Study of High School Graduates; and X. Study of Montgomery College Students. An appendix provides three tables: Head Count Enrollments by Curriculum Offered by Montgomery College; Head Count Enrollments by Community Service Courses Offered by Montgomery College; and Courses and Activities Offered by Department of Adult Education, Montgomery County Public Schools. The text is illustrated by 88 tables, 2 figures, and 4 charts. (DB)

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A report on

UNMET
EDUCATIONAL
NEEDS

Advisory Committee on Program Identification
in the
Down-County Area

JC 740 089

MONTGOMERY COLLEGE
Takoma Park - Rockville
Maryland

February 1974

FOREWORD

The report on Unmet Educational Needs was prepared by the Advisory Committee on Program Identification in the Down County Area during the period October 1973 through February 1974.

The special advisory committee was appointed by the Montgomery College Board of Trustees and charged with the responsibility for studying the broad base of citizen interest in the potential program offerings of the College as they relate to unmet educational needs in the area.

The report provides a comprehensive view on matters related to future curricula, programs, and services of Montgomery College. Emphasis is placed on the unmet program needs in the down county area of Montgomery County. However, included is material that is of value in educational planning for the total County and in assessing the current programs and services of the College.

"Down County" for purposes of this report is generally defined as bounded on the south by the District of Columbia, on the east by Prince Georges County, on the north by Randolph and Montrose Roads, and on the west by the Beltway and Potomac River. Slightly more than half of the County's population is now in this area.

Chapter I - Summary of Findings, Conclusions, and Recommendations is the key portion of the report. Chapter I has been printed in many more copies than the full report, which is printed in limited numbers because of its size. Those who wish to see the full report may do so at any County library, both Montgomery College libraries, and each public high school library. Further information concerning the full report may be obtained by calling the Office of the Dean of Education of Montgomery College (762-6088, extension 381).

The Committee has presented this report to the Board of Trustees so that it can consider the material on unmet educational needs along with other findings, such as those on facilities, transportation, and locations.

Robert E. Brennan
Chairman
Committee on Program Identification
in the Down-County Area

ACKNOWLEDGEMENTS

The Montgomery College Advisory Committee on Program Identification in the "Down County" Area acknowledges with deep appreciation and gratitude the valuable assistance received from many persons during the progress of this study. We especially appreciate the cooperation of Montgomery County Public School officials in helping to obtain information from high school seniors, high school graduates, and parents of children in the fifth grade in selected schools. Appreciation is also expressed to college officials who assisted in obtaining information from a statistical sample of students currently enrolled.

We are grateful for the time devoted by executives of business, industry, labor unions, and government agencies in providing information to the study. Our gratitude is expressed to guidance counselors, directors and teachers of vocational education, College staff members and students, and citizens who participated in the public forums and conferences. We appreciate too the time many community leaders and senior citizens devoted to providing information, opinions, and suggestions.

This study was carried out with invaluable assistance from Dr. Rufus Browning, Dean of Education, Montgomery College, who served as Executive Secretary to the Committee, and from Dr. Raymond J. Young, Senior Staff Member, Arthur D. Little, Inc., who served as consultant. Special acknowledgement is given to Dr. Robert Gell, Dean of Institutional Research and Analysis, whose office was the source of some statistical data used in this study. We appreciate, with thanks, the many hours devoted by members of the study committee, their diligent efforts, and their contributions in conducting and in bringing the study to a successful conclusion. No expression of appreciation is enough for the valuable assistance rendered by Ms. Geraldine Cox and Ms. Barbara Iredell for secretarial services in preparing the report in its present form.

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CHAPTER I

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to assess the need for educational programs and services which Montgomery College can provide for residents in the "down county" area of Montgomery County. The study was conducted, with the assistance of consultants, by the Montgomery College Advisory Committee on Program Identification in the "Down County" Area, a committee created for the purpose by the Board of Trustees for Montgomery College. This study can have broad and important meaning for the total County and its post-secondary educational program.

The "down county" area, as defined by the Board of Trustees, is the area north of the District of Columbia, east of the Potomac River, west of the Prince Georges County line, and south of a line beginning at the Potomac River, then eastward along the Beltway to Rockville Pike (Wisconsin Avenue), then northeastward in Rock Creek Park and up Joseph's Run Avenue and Connecticut Avenue to Randolph Road, then eastward to Paint Branch, then southward to the Prince Georges County line. Old established communities within the study area include Cabin John, Bethesda, Chevy Chase, Garrett Park, Kensington, Wheaton, Silver Spring, White Oak, Langley Park, and Takoma Park.

Information was obtained for the study from official documents produced by agencies of Federal, State, and County governments, planning agencies, Montgomery College, and Montgomery County Public Schools. Other information was extracted from available research studies. Information, opinions, and ideas were obtained from selected groups of high school graduates, high school seniors, parents of children in the fifth grade, College students, senior citizens, public school directors, and teachers of vocational education and guidance workers, College faculty members, executives of labor unions and local business, industrial, and government enterprises, community leaders, and citizens, in general, who attended public forums. Although detailed analyses of findings are presented in subsequent parts of this study report, the major results are summarized in this chapter. Following the summary of findings are the committee's conclusions and recommendations based upon the findings and their deliberations.

Part I - Summary

Population Characteristics

1. Montgomery County population can be characterized by a declining birth rate lower than for the Nation, shifting age composition resulting in proportional increases of persons age 25-44 and over 65, with a decrease in persons age 14 and under, and an increasing proportion of total population in the Washington area. Total population has been forecast to increase from 522,809 in 1970 to 747,000 in 1983, and an increase in birth rate may be expected toward the end of this period. Immigration has slowed pending termination of sewer moratoriums and revival of housing construction. The population contains an increasing proportion of senior citizens and a large proportion of single women age 20-29.

2. The median education level of County residents was very high when compared with national figures, and a relatively low proportion had incomes below the poverty level.

3. In both Montgomery County and in the "down county" area, 20.5 percent of all persons over age 25 had not graduated from high school. There were 58,050 County residents in 1970 who had not graduated from high school, and 32,589, or 56.1 percent, were in the "down county" area.

4. By ethnic background, the population of Montgomery County was 94.5 percent white, 4.1 percent Negro, and 1.4 percent "other." Chinese, Japanese, Filipino, and Indian constituted most of the persons in the "other" category. Negro residents lived in every Census Tract in the "down county" area, and Spanish-speaking residents lived in all but three of the tracts.

5. Although the proportions of total County population as well as numbers of high school students in the "down county" area have been declining, 56 percent of the total County population is expected to reside in the "down county" area by 1983.

6. Public elementary school enrollments are expected to decline each year throughout the 1970's while high school enrollments will remain fairly stable throughout the decade.

7. "Down county" as defined in this report is an area in transition where the future enrollment of the College will depend on several contingencies. Area master and sector plans are now nearing completion which could, when adopted and implemented, have substantial impact on the population characteristics for the area. Changes in density and zoning, County government policy designed to stimulate or retard development in selected areas, and the timing of development in response to growth needs can all affect the current population forecast for the "down county" area.

Characteristics of the Labor Force in Montgomery County

1. When gainfully employed residents of Montgomery County, wherever they were employed, were classified by industrial segments of the economy in which they worked, the largest percentages were in service industries, government, and trade sectors. Between 1960 and 1970, percentages decreased in the sectors of agriculture, forestry and fisheries, construction, manufacturing, transportation-communications, public utilities, and government. An increase in percentages occurred for residents employed in the trade, services, and finance-real estate-insurance sectors.

2. Although the proportion of all employed persons working in government declined, this sector had one of the largest percentage increases in absolute numbers of persons. In many ways, the proximity of Montgomery County to the Nation's capital is reflected in the economy, including the occupational and industrial structure.

3. During the 1960's, total numbers of Montgomery County residents employed increased about 70 percent, while total population increased about 53 percent. The largest percentage increase was in the service industries; and, within this sector, the largest increases were in legal, engineering, and miscellaneous professional services, business and repair services, and educational services.

4. When all gainfully employed Montgomery County residents were classified by type of occupation, it was found that the percentage distribution was atypical compared to national figures. Approximately one-third of the Montgomery County workers (compared to about 15 percent in the Nation) were engaged in a professional, technical, or kindred type of work. About 12 percent of the employed residents of the County (compared to 31 percent in the Nation) were craftsmen, foremen, and operatives. The largest shifts in occupational structure of Montgomery County residents during the 1960's were increases in percentages of professional and technical, clerical, and service workers other than household workers; and decreases in craftsmen and foremen, operatives, laborers, and household workers. The percentages of managers, administrators, and sales workers remained about the same.

5. The largest percentages of persons working in Montgomery County, whether or not they lived there, were in the service industries, government, and retail trade sectors.

6. Increasing percentages of Montgomery County residents work within the County; the 1970 percentage was 50.5 percent. The proportion of women in the work force is increasing. Upsurges in economic activity due to Federal salary catch-up boosts and influx of national and international service organizations are expected to level off.

7. The total number of persons in non-farm jobs within Montgomery County in 1980 has been forecast to approximate 270,990 compared with the estimated January 1972 employment of 203,277 (about a 33 percent increase).

Manpower Requirements in Montgomery County and Washington Metropolitan Area

1. Largest manpower requirement demands have been forecast in Montgomery County between 1971 and 1976 for the following occupations requiring preparation beyond the secondary school:

   - Accountant
   - Accountant-Assistant
   - Bookkeeper, Clerical
   - Buyer or Purchasing Agent
   - Cartographer & Cartographic Technician
   - Commercial Artist
   - Computer Operations Supervisor
   - Computer Programmer
   - Draftsman
   - Inside Salesman
   - Library Assistant
   - Licensed Practical Nurse
   - Management Trainee
   - Medical Laboratory Technician
   - Medical Technologist
   - Outside Salesman
   - Personnel Worker
   - Registered Nurse
   - Secretary (specialized)
   - Social Welfare Assistant
   - Systems Analyst
   - Teacher
   - Technician:
     - Architectural
     - Civil Engineering
     - Electronic
     - General Engineering
     - Mechanical Engineering

2. A number of manpower demands cited by a sample of Montgomery County employers corroborated those identified through research studies. Demands mentioned that were not included among those cited in research studies were as follows:

Air Conditioning/Heating/Refrigeration Technology
Auto Mechanics Technology
Bio-Electrical-Electronics Specialists
Business Equipment Repair
Day Care Center Workers
Food Service Mgmt. & Preparation
Hotel-Motel Management
Para-Professional Teacher Aides
Printing Technology
Word Processing Equipment Operators

3. Government service, miscellaneous business services, medical and other health services, construction, and educational services were forecast to be the largest growth industries in the Washington Standard Metropolitan Statistical Area of which Montgomery County is a part. Certain other industries, such as auto repair services and automotive dealers, are expected to be among those in the highest order of demand.

4. Occupations relevant to post-secondary education for which highest annual demand is expected in 1975, 1980, and 1985 in the Washington SMSA were, in order of demand: secretaries, lawyers and judges, accountants and auditors, nurses, workers and teachers in the arts and entertainment, cooks, office machine operators, motor vehicle mechanics, medical and dental technicians, and practical nurses. Next, in order of demand, were: electrical engineers, personnel and labor relations workers, elementary and secondary teachers, draftsmen, social and welfare workers, physicians and surgeons, civil engineers, law enforcement and security personnel, college teachers, stenographers, designers, and economists.

5. A relatively small number of post-secondary private trade and vocational schools exist in Montgomery County; those that do exist indicate demand in (1) cosmetology, (2) practical nursing, (3) art and design, (4) data processing, and (5) dance, drama, and music.

6. There are many predictions in national manpower trends which could be of importance to Montgomery County. (These are presented in detail in Chapter IV.) Among the more important findings are:

   a. Middle manpower occupations are becoming more and more open to women.

   b. The concept of lifetime learning will increase in importance.

   c. The critical shortage of scientists, engineers, and industrial technicians has abated, although a supply of highly skilled technicians will still be needed.

d. Secretaries and specialized office workers will still be in demand.

e. The middle management field in business is in a near balance situation.

f. Computer science personnel will no longer be in peak demand.

g. Personnel for health occupations will be needed.

h. Employment in agriculture continues to trend downward. In this field, the previously forecasted demand for middle management personnel in environmental improvement and conservation of natural resources represent potential areas of employment that have not materialized.

i. The relatively new area of human service occupations has not yet provided large numbers of middle manpower jobs, in spite of forecasts by experts to the contrary. None is in a situation of national demand like some other fields, such as nursing.

Status of Montgomery College

1. Montgomery College is one of sixteen public community colleges of the State system of higher education. It grants the associate of arts degree for completion of its two-year curricula, and certificates for selected one-year curricula. It also conducts a growing community services program, including short-term, non-credit courses which are supported by State funds, as are all credit courses offered.

2. Montgomery College has two campuses, Rockville and Takoma Park, on each of which are provided instructional and support facilities, but no dormitories, residential halls, or other living facilities.

3. During the fall 1973, 38 two-year curricula and 6 certificate programs were offered including quite varied offerings in the liberal arts and sciences, and in general education.

4. Not all curricula or courses are offered on both campuses, although liberal arts and general education courses predominate on both campuses. The allied health career and technical curricula are centered at the Takoma Park Campus, while the Rockville Campus offers such career programs as Criminal Justice, Hospitality Management, Printing Technology, and Engineering Technologies.

5. A variety of community services is offered, including over 100 short-term, non-credit offerings at more than two dozen sites. Most organized and college-sponsored community service activities are of a special-interest course variety. Other forms of community services include workshops, seminars, cultural events, lecture series, and many events co-sponsored with various community organizations.

6. A variety of student personnel services is maintained, including guidance and counseling. The libraries and learning resources programs are important parts of the College program.

7. Over one-half of the Montgomery College students are enrolled in liberal arts and science transfer programs or in the general education curriculum; 22 percent are in career programs, and about one-fourth are in non-degree programs.

8. There is a recent trend at Montgomery College for increased percentages of part-time compared to full-time enrollments.

9. The 1973 academic fall enrollment at Montgomery College was 11,708 persons who carried a total aggregate number of semester hours equal to about 8,000 full-time enrollments. Approximately 53 percent of all students were enrolled full-time, and 47 percent were enrolled part-time (less than 12 semester hours). Slightly more than three-fourths of all freshmen and 70 percent of all sophomores were enrolled at the Rockville campus. About two-thirds of the students at the Rockville campus, and a slightly smaller percentage at the Takoma Park campus, attend during the day.

10. The proportion of the County's population enrolled for academic credit at Montgomery College has been increasing each year, but the level of service is slightly below the potential enrollment level that could be expected in the future.

11. Between 25-30 percent of the students are age 25 and over. About one-fourth are married, and 90 percent live in Montgomery County. About 8 of every 10 college applicants for admission actually enroll at the College. Slightly more than 7 of every 10 students enrolled during the fall return the following spring term; larger percentages of full-time than part-time students return.

12. A follow-up study of Montgomery College spring 1973 graduates revealed that 63 percent planned to enter the junior year of a four-year college or university in the fall, and 35 percent planned to work full-time. Two percent had no definite plans.

13. Percentages of high school graduates attending Montgomery College vary considerably among the high schools, and the total of 26 percent in 1970 declined to 19 percent in 1972. Nearly 73 percent of the 1972 "down county" area public high school graduates continued their formal education during the 1972-73 year, and 21.3 percent attended Montgomery College.

14. A Montgomery College enrollment of approximately 11,000 full-time equivalent students (and 18,000 head count) is both a reasonable and possible expectation for 1979.

Consumer Interests in Programs and Services

A. Surveys Conducted

Studies were conducted of selected members from five groups of persons. They were:

1. Community leaders (see Chapter VI)
2. Parents of fifth grade students (see Chapter VII)
3. High school seniors (see Chapter VIII)
4. High school graduates (see Chapter IX)
5. Montgomery College students (see Chapter X)

In addition, a small group of senior citizens was contacted. The group was so small that results can be used only for guidance, and no generalizations from the findings are warranted.

B. Image and Evaluation of Montgomery College

1. Seventeen percent of the community leaders polled characterized the quality of students at Montgomery College as "better than average," 45 percent believed student quality was "average," 7 percent thought it was "below average," and 31 percent indicated they didn't know how it was.

2. While some high school seniors who said they were in the top academic third planned to attend Montgomery College, the largest percentages planning on enrolling there reported they were in the middle or lower third of their classes.

3. Over three-fourths of the responding Montgomery College students indicated they would enroll at Montgomery College if they were making the choice again, and about one-half thought the College was giving them just what they needed for what they planned to do later. Largest percentages who would choose the College again were men who expected to complete a degree or certificate program at the College and women who did not expect to do so. Largest percentages of students who thought the College was giving them just what they needed were men expecting to earn a degree or certificate at the College. A slightly smaller percentage of College students who had attended "down county" high schools than other students believed the College was giving them just what they needed in view of future plans.

   One-third of the College students responding believed their preparation through the College program for what they planned to do later was good in most ways but could be better in some ways. Fifteen percent of all respondents believed the College was not preparing them very well, or that the preparation was fair and could be better; over one-fifth of the women students from "down county" high schools expressed these views.

4. Of several types of College programs and/or services, students indicated the library was the most used, followed by counseling services. Except for tutoring, the least utilized services were in job placement. Students indicated they received the greatest amount of help from the services which they utilized most.

5. Many suggestions were given by College students for improving the College. Those related to teaching methods and curricula seem related to concern for quality and relevancy, particularly more "hands on" practical experiences in occupationally oriented programs. Suggestions regarding curricular offerings urged some additions and expansions. Effectiveness of instruction and interest in students seemed to be the thrust of suggestions regarding faculty. Relevancy of course requirements to program purpose was the concern of some suggestions; others related to administrative matters, student activities, and relationships with other colleges or universities.

C. Reasons Why Students Attend Montgomery College

1. Low cost and convenience of location were cited by largest percentages of College students as the most important reasons why they chose Montgomery College, by high school seniors and community leaders as to why students enroll there, and by parents as reasons why they would encourage their child to attend. Word that the College offers a good education was cited as another important reason by community leaders and parents, while high school seniors cited a low high school grade average as a reason, and College students cited presence of courses wanted as a reason.

2. The largest percentages of community leaders indicated they believed that the factors of much importance in causing more of their adult acquaintances and friends to enroll in College-sponsored community service, non-credit, short-term, special-interest classes were: (1) more adequate information about special interest classes for adults, and (2) closer cooperation between the College and community organizations in sponsoring special-interest classes for adults. More adequate information and improved methods for determining topics or subjects of special interest to adults were factors to which the largest percentages of community leaders ascribed both some and much importance.

3. About 15 percent of all parents indicated one or more of their children would probably or definitely attend Montgomery College; 48 percent were uncertain, and others indicated their child would probably not attend there. A majority of parents had had no type of association with Montgomery College. A larger percentage of parents with some previous association with Montgomery College than other parents were more certain that one or more of their children would attend there.

4. Slightly over 41 percent of all high school seniors expected to continue their schooling in Maryland with 19 percent of these expecting to enroll at Montgomery College. Nearly one-third expected to attend college out of Maryland, with only 1 percent expecting to attend in the District of Columbia. The largest percentages of seniors reported in the upper academic third planned to attend the University of Maryland or a college outside the State.

D. Reasons for Non-Attendance at Montgomery College

1. Desire to live away from home and desire for a better college were cited by high school graduates as reasons of some importance why more of their friends and acquaintances did not enroll at Montgomery College. Largest percentages of graduates who had attended college cited these reasons, but largest percentages of those who had not attended college cited as much importance advice of others and unavailability of program wanted. While the largest percentages of both men and women indicated that campus location and lack of transportation were reasons of no importance, higher percentages of women than men indicated they were reasons of some importance (over one-third of the women felt lack of transportation was of some importance).

2. The largest percentage of high school graduates who were not attending school at the time of the study gave lack of interest as the reason. The number of these graduates who indicated they would have attended school, if more financial assistance had been available, represented 3 percent of all graduates responding to the study.

3. Over one-fourth of all College students indicated lack of transportation and inconvenient location of campuses as reasons of some importance why more high school classmates and friends did not enroll at Montgomery College. A larger percentage of men than women who do not expect to complete a degree or certificate at the College, and a larger percentage of women than men who do expect to complete a degree or certificate, indicated lack of transportation as a reason of some importance why they believed more classmates and friends did not enroll.

4. When compared with responses of all College students responding, a smaller percentage of men and a larger percentage of women from "down county" high schools indicated lack of transportation as a reason of some importance why they believed more of their classmates and friends did not enroll in Montgomery College. Of men and women who attended a high shcool in Montgomery County outside the "down county" area, 36 and 27 percent, respectively, believed lack of transportation was a reason of some importance why more fellow high school students did not enroll.

5. Over one-third of all College students responding believed lack of information about the College was of some importance why more fellow students and friends did not enroll at Montgomery College.

6. Nearly one-fourth of the "down county" men, and over one-fifth of the women College students from high schools in Montgomery County elsehwere, indicated they thought a reason of some importance why more classmates and friends did not enroll at Montgomery College was advice from high school counselors not to enroll there. Twenty-eight percent of men from "down county" high schools, 21 percent of men who attended high school elsewhere in the County, and about 15 percent of the women from all high schools indicated they believed advice from high school teachers not to enroll in Montgomery College was of some importance why more of their friends and classmates did not do so.

7. Desire for a better college, desire to live away from home, and lack of program wanted, in that order, were reasons of some and much importance College students gave as to why more classmates and friends did not enroll at Montgomery College.

8. High school seniors whose plans definitely or probably did not include continuing in school gave as their most important reasons: (1) desire to work and make money, (2) tired of school, and (3) inability to make good enough grades. While about one-half of the girls not planning on more schooling indicated they would be interested in one of several types of non-formal education, nearly 8 of every 10 boys expressed such an interest. Greatest interests were expressed in either an apprenticeship or on-the-job training.

9. Nearly one-half of the high school seniors whose plans did not include more schooling indicated definitely or maybe they would change their mind about continuing their schooling, if more money were available. Those who would change their mind constituted 8 percent of all seniors responding to the study.

10. Reasons given by high school seniors as to why more friends/classmates do not attend Montgomery College in order of mention were: (1) desire to attend a better college, (2) desire to live away from home, (3) program courses wanted are not offered, (4) not interested in continuing in school, and (5) advised by others not to attend.

11. Reasons why the largest percentages of parents might not encourage their child to attend the College were: (1) child might not be interested, (2) want child to attend a better college, and (3) program needed not available.

12. Over one-fifth of the parents who might not encourage their child to attend Montgomery College indicated that they had inadequate information about the College.

13. Thirty percent of the senior citizens who responded indicated that a reason for not enrolling in College classes was they did not know what was offered.

14. Slightly over one-half of the senior citizens indicated lack of transportation to where programs are offered as a reason why more did not enroll for courses at Montgomery College. Forty-six percent thought more persons would enroll if a bus picked them up at their location.

15. Participants in the citizen open forums cited problems in their participation in or use of College services as: (1) lack of transportation, (2) campuses poorly marked and difficult to find, (3) lack of knowledge about the College, and (4) lack of communication and understanding between the College and the public. The latter permeated discussions held at each forum.

16. High school guidance counselors indicated that not only did they not know what the College offerings were but that many persons in the community also did not know what offerings were available.

E. Factors Related to College Attendance

1. Graduates' perceptions of how their parents felt about them continuing their education beyond high school revealed a very

high level of encouragement, as 98 percent believed parents either insisted or wanted them to continue.

2. A high level of parental encouragement to continue in school was also felt by high school seniors.

3. Seniors' plans for continuing their education were found to be positively related to reported academic status, perceived parental attitudes, length of residential tenure in the area, perceived financial status, and being enrolled in a college preparatory curriculum. No relationship was found between seniors' plans and whether they lived with both parents or in a broken home.

4. About one-tenth of all seniors indicated future plans would definitely or probably not include continuing their education somewhere after high school graduation, and another 7.6 percent "did not know" if their plans would include more school. Slightly over 58 percent indicated plans definitely would include more schooling, and nearly 24 percent indicated plans would probably include such activity. About 14 percent of all seniors expected to delay further schooling until sometime after the year following graduation.

5. About one-fifth of all parents indicated they had a definite savings plan for financing their child's education; 28 percent expected to pay all expenses, while one-third expected to help the child earn his way.

6. Slightly over 8 of every 10 College students usually get from where they start the trip to the College by automobile or other motorized vehicle owned by themselves or family members. More than three-fourths of all students spend less than 30 minutes on the average getting to the campus where they are enrolled.

   If a campus were to be located closer to home, 39 percent of all College students responding, and 39 and 43 percent, respectively, of men and women from "down county" area high schools indicated they would probably attend there.

   Twenty-nine percent of the men from County high schools outside the "down county" area, and 48 percent of the women from those schools would prefer to attend the campus where they are enrolled, compared to 26 and 20 percent, respectively, of men and women from "down county" high schools.

7. About 4 of every 10 College students believed there would be an advantage if students could enroll at both the Rockville and Takoma Park campuses at the same time for part of their classes. Another 2 of every 10 were undecided.

F. Interests in Academic Credit Programs

1. Among responding College students who indicated there were fields of study in which they were interested, but not offered by the College, the largest percentages were men and women students who didn't know if they would complete a degree or certificate program at Montgomery College, men who said they were in the lowest academic third of their high school class, and women reported in the top and middle thirds of their high school class. Some fields recommended by these respondents are already offered by the College, showing that the respondents were not fully aware of the full range of offerings.

   Fields of study not offered by the College but recommended were dental hygiene, rescue paramedical aide, physical therapy assistant, library assistant, ornamental horticulture, interior decoration, and auto mechanics (technology).

2. Over two-thirds of the men and slightly over one-half of the women expect to transfer to a four-year college or university after attending Montgomery College. Fifteen percent of the men and 26 percent of the women expect to work for themselves or others (primarily the latter) after attending Montgomery College. Larger percentages of men and women from "down county" area high schools than other students expected to transfer for continued education. Slightly higher percentages of respondents expecting to complete a degree or certificate at the College than those who do not, plan on transferring. A majority of all College students who do not expect to complete a credential at Montgomery College expect to transfer to a four-year college or university.

3. Over one-half of all College students expected to continue their education on a full-time basis after leaving Montgomery College and 35 percent expected to do so on a part-time basis. Smaller percentages of men and women from "down county" high

schools than others expected to continue their education on a part-time basis, and higher percentages from these high schools than others expected to attend on a full-time basis.

4. Larger percentages of high school graduates who had attended Montgomery College than the University of Maryland gave job preparation and job improvement as major purposes why they would be interested in further education. Larger percentages of those who attended the University gave as major purposes self-improvement and desire to finish the program in which they were enrolled.

5. Over two-thirds of all high school graduates responding aspire to a professional career, and 14 percent expect to follow a semi-professional, technical, or middle-level business occupation. Three-fourths of the men and 78 percent of the women who had gone to college aspired to a professional career, but 15 percent of the men and 7 percent of the women who had attended college did not know what they planned to do.

   Long-range occupational interests were predominant in the areas of business, teaching, health, social and government services, law, and science-based fields.

6. Women high school graduates expressed most interest for further study in liberal arts, teacher education, law, and art. Men expressed most interest in science, medicine, law, liberal arts, and business administration. Data show that about 9 of every 10 men and women who attended college could have found the program of their greatest interest at Montgomery College, although in most instances they could not complete their training in a two-year program.

7. Fields of interest for further study suggested by high school graduates included veterinary science, interior design, photography, automotive technology, dental hygiene, speech and hearing science, social work, and radio and television communications.

8. The field of greatest interest for further study by high school seniors was liberal arts and sciences (including pre-professional law, teacher education, medicine, and general education). In descending order of interest expressed, other fields of most interest were: (1) business administration, (2) secretarial science, (3) art, (4) accounting, (5) criminal justice, (6) nursing, (7) automobile mechanics, (8) music, (9) physical education, and (10) environmental studies.

9. Over one-third of the high school seniors indicated there was a field of study not included in a listing of programs offered and planned at Montgomery College in which they would have been interested. A number of curricula and courses now offered by Montgomery College were among those in which seniors expressed interest. A third of all seniors indicated the field of their greatest interest was offered at Montgomery College, 12 percent believed it was not, and 48 percent didn't know whether it was offered there.

10. The largest percentage of seniors expressed long-range occupational interest in a profession. In descending order, the largest percentage of girls expressed occupational interests in the broad areas of: (1) office-clerical-secretarial, (2) art, (3) nursing, (4) business management, (5) laboratory technology, and (6) homemaking. The largest percentages of boys expressed occupational interests in the broad areas of: (1) business management, (2) law enforcement, (3) entertainer-performer, (4) agriculture, (5) mechanics (largely automobile), and (6) running their own business.

11. Eighty percent of the parents responding indicated they wanted their child to prepare for a professional career. Although parents' educational aspiration for their child was not associated with length of time lived in the County, it was found positively related to the educational level attained by parents.

    A relatively high percentage of parents expect their child to complete four or more years of college. About 11 percent expect their child to complete a community college education. Two-thirds definitely planned on their child continuing his education beyond high school, and another 29 percent indicated the child would probably continue his education. Larger percentages of parents with boys than girls definitely plan on their child continuing in school after high school.

12. Thirty-one percent of the mothers, but only 9 percent of the fathers, of children in the fifth grade were found to be interested in further education or occupational training at Montgomery College. About 4 percent of the respondents indicated there was some other adult in the household who would also be interested.

The largest incidence of interest for formal academic credit fields of study in descending order were: (1) art, (2) business administration, (3) teacher education, (4) music, (5) advertising art, liberal arts, nursing, computer science technology or social service aide, and (6) general business management or transportation (travel, tourism, etc.).

13. Asked about interests in college level courses, 5 percent of the senior citizens indicated an interest in such courses on a college credit basis, and another 22 percent expressed interest in them on a non-credit basis. Largest percentages of interest were expressed for courses in fine arts, liberal arts, and recreation.

14. Community leaders recommended college credit programs or courses in agriculture (ornamental horticulture, conservation, park management, etc.), real estate, journalism, and debate. Other recommendations were special education aide, psychiatric aide, dental hygiene, auto-mechanics, building trades, and air-conditioning repair.

15. Among the suggestions offered in public forums for programs and courses were: strong emphasis on quality transfer liberal arts and sciences as the basic core of offerings, English as a second language, Russian and Chinese languages, bi-lingual programs, biomedical technology, family day-care worker, licensure and certification of volunteer tutors and educational reading assistants, building trades technology, supervisory training for trade and industrial workers, licensure programs for auto mechanics, T.V./radio repair, and air-conditioning, heating, and refrigeration specialists, place of trade unions in society, physical fitness for older women, training of foreign language translators, and education for parenthood.

16. College faculty and students suggested the College offer licensing or certification programs in such fields as auto mechanics, T.V./radio repair and maintenance, and electrical appliance repair.

17. Several specific programs recommended by public high school counselors were dental hygiene, broadcasting performing, auto mechanics, more allied health programs, and data-processing programming.

18. College faculty members expressed concern that quality be maintained in offerings, that a system of priorities be used in program development or expansion, and that every effort should be made to fully utilize existing facilities before others are developed.

G. Interests in Services and Assistance

1. Greatest incidence of interest expressed by parents in non-credit adult education classes was found for (1) painting, (2) speed reading, (3) photography, (4) practical consumership topics, (5) appliance repair, (6) interior design, (7) applied psychology, (8) French, and (9) secretarial skill refresher courses.

2. First choice interests in community service topics were given by the largest percentages of high school graduates for (1) photography, (2) speed reading, (3) applied psychology, (4) self-defense, and (5) automotive technology. Predominant second choice interests were for (1) self-defense, (2) photography, (3) applied psychology, (4) automotive technology, (5) speed reading, and (6) practical consumership. Other suggested topics included music, social and political science related topics, business topics, motorcycle mechanics, and a miscellany of other topics.

3. About 8 of every 10 responding senior citizens who had not attended college, and about 6 of every 10 who had gone to college, believed senior citizens had different recreational, leisure time, and educational-cultural interests than people who had not reached retirement age. Fifty-seven percent of all respondents thought senior citizens preferred to have special activities organized especially for them rather than be able to participate with persons of younger age, but 30 percent did not think this was the case.

4. Sixteen percent of the senior citizens did not think all the needs and interests of senior citizens were adequately met by activities and programs offered by the College, public schools, or Recreation Department. A larger percentage of senior citizens who had attended college than others felt this way.

5. A larger percentage of senior citizens who had not attended college, than those who did, expressed interest in recreation-type activities. However, a larger percentage of senior citizens who had attended college, than those who hadn't, expressed interest in leisure time-hobby-avocational type activities and also educational-cultural type interests. Over 4 of every 10 senior citizens responding to the inquiry expressed an interest in each of the three types of interest. Theatre and bridge were named most frequently by senior citizens who named their interests.

6. The largest percentage of all high school graduates identified job or career counseling service as a type of assistance in which they would be interested - nearly one-third of the women responding expressed interest in this type of assistance. Slightly under one-fifth of the men and women identified individual music lessons as a type of assistance in which they were interested. Next in order of incidence of expressed interest were: reading improvement (10 percent), individual sport instruction (9 percent), refresher mathematics (7 percent), and refresher secretarial skills (7 percent of the women). Other suggestions focused on basic communication skills.

7. One-third of all high school graduates responding believed there were some types of educational-cultural services and activities which should be available to adults in the area where they live. Their suggestions included a wide variety of special interest topics; emphasis upon community education lectures, discussions, and seminars focused on problem areas; increased cultural opportunities; development of expanded counseling services for adults; and activities for keeping the public more informed about offerings available.

8. Parents of children in the fifth grade expressed interest in the following types of assistance: (1) individual music lessons (19 percent), (2) individual sport instruction (14 percent), (3) refresher mathematics (12 percent), (4) reading improvement (12 percent), (5) refresher secretarial skills (12 percent), and (6) job or career counseling (11 percent). About 41 percent indicated they had no interest in any assistance of these types.

9. Nearly 35 percent of the community leaders indicated there were special interest subjects or topics they believed would serve the educational-cultural interests of residents. Most suggestions were topics in the social sciences, trade-technical, psychology, and business areas.

10. Most College students suggesting community service offerings in which they would be interested on a non-credit basis were those who had been reported in the lowest third of their high school classes and those who did not plan to complete a degree or certificate at Montgomery College. Many offerings suggested are already offered in the County by one or more agencies. Largest numbers of persons suggested: (1) auto mechanics, (2) art, (3) psychology, (4) music, (5) ceramics, (6) current politics, and a variety of other less frequently mentioned topics.

11. Job retraining and upgrading programs for business and industrial professionals with degrees and mature women desiring to enter gainful employment were recommended by College faculty, executives of local business, government, and industrial organizations, and forum participants. The latter urged consideration for needs of senior citizens and apartment dwellers.

H. College-Community Relations

1. A number of suggestions were given by community leaders for cooperation between Montgomery College and community organizations or groups. While some dealt with ways the community could be brought to the campus, most related to ways in which the College could go to the community.

2. Some of the same titles of offerings are provided by Montgomery College, the Public School Department of Adult Education, and the Montgomery County Recreation Department. Duplication of titles appears to exist, but further exploration is necessary to determine if these are, in fact, true duplications that are directly competitive.

3. Public school vocational teachers and directors of vocational education and public school counselors emphasized the need for articulation between the College and secondary schools in a number of program areas and in the provision of guidance and counseling services. They recommended that two-way communication channels be maintained on a continuous basis between the College and secondary schools.

4. Career program course offerings in "down county" area high schools have been identified in this study to serve as a base of information for College program planners and as a starting point for mutually beneficial discussions by staff of each institution on such matters as the nature, scope, depth, and sequence of knowledge and skill training appropriate at each level.

5. About two-thirds of all high school seniors indicated they needed more information about different colleges to make a decision about plans after graduation. Those in the college preparatory and general curricula believed they had more information than others. Friends and relatives, written materials, other high school students, high school staff, and college representatives (in this order) were indicated as sources of much information about Montgomery College.

6. College faculty and students attending forums held at the College recommended more community-College interchange and communication.

7. Employers suggested ways the College could establish cooperative working relationships with local industries and businesses to provide counseling services and programs for management upgrading, employee upward mobility, updating technical knowledge for persons with degrees, and for refreshing job skills or retraining persons, especially women, who had been out of the work force but desire to enter or return. Employers stressed the need for the College to have a system for change which would keep its occupationally related programs in tune with changing job requirements. Visitations to plants and businesses were strongly suggested by faculty as a means of keeping in touch with the realities of the work world.

Part II - Conclusions

1. Though Montgomery County is recognized as an area which will continue to grow in population, the "down county" area, as defined in this study, is an area in transition whose potential for future growth will be strongly influenced by contingency factors related to sewer moratoriums, curtailment of housing and commercial construction activities, development of public transportation systems, and pending area and sector master plans. This is also true, but in a different way, for growth in other areas of the County.

2. Although the area defined as "down county" now contains the majority of County residents, this may not be the case by the end of the decade, depending upon how the County is allowed to grow. While at the moment, potential enrollment for Montgomery College is less from the "down county" area than from the rest of Montgomery County, growth policy decisions now under consideration by county government officials deserve close attention by college planners and managers during the coming years in determining where the greatest potential for future enrollment will develop.

3. The "down county" area contains people with more economic affluence and a higher than normal level of education compared to the national norm; it also contains areas with high concentrations of minority and ethnic groups, under-privileged households, and large numbers of single women and senior citizens. However, to a large degree, citizens of the "down county" area reflect a higher than normal level of educational and occupational aspiration, both parents for their children, and the youth themselves.

4. The proximity of the District of Columbia and the Washington Metropolitan Area to Montgomery County, and the large percentage of individuals employed by the Federal Government, should continue to influence the state of the economy and occupational structure of the County for many years to come.

5. Service-related occupations and industries on the middle manpower and professional levels will continue to expand. As increasing proportions of residents work in the County, they will be engaged in trade, human services, and finance-real estate-insurance industries, and they will be employed in professional, technical, managerial and administrative, and clerical and kindred occupations.

6. Inasmuch as the employment outlet for Montgomery County youth is not limited to the County, the community college should concentrate on programs to accommodate interests and aspirations of potential and actual students, rather than permit manpower requirement forecasts alone, in the County, the Washington Standard Metropolitan Statistical Area, or the State, to dictate what programs should be offered.

7. There is an insufficiency of information and understanding of the College by adult citizens, youth, and even some students now enrolled at the College. Students who are not fully aware of the fields of study available to them, adults who do not know what the College offers in their field of interest, and employers who are unaware of the potential for trained personnel need to be better informed than apparently is the case. The future of the College rests with the future of the community, and both require a better understanding of the goals, aspirations, and capabilities of the other.

8. Community colleges in Maryland have a legal responsibility to provide not only the first two years of regular liberal arts and science education, but also occupational programs of varying duration for job entry, job improvement, and job retraining in middle manpower, technical, and semi-professional and non-technical artisan, trade, and service levels to meet manpower requirements.

9. Montgomery College should continue its present high-quality liberal arts and general education academic credit programs, but some additional programs should be considered at both the one-year certificate and two-year associate degree levels, particularly in the provision of occupational programs designed to meet middle manpower requirements and requirements in the artisan, trade, and service levels.

10. Regardless of purpose, all programs offered by the College should stress high quality. New occupational programs added to the curriculum should not be added at the expense of the current high-quality of academic credit programs now in existence.

11. Community Service non-credit course offerings, and off-campus decentralized credit programs should be continued and expanded, taking into consideration changing interests of people, and such activities provided by other agencies within the County, especially the County Recreation Department and the Adult Education Department of Montgomery County Public Schools.

12. There are types of non-course community service activities of interest which, if developed, would enhance the role of the College in the County and enable it to more fully serve the educational-cultural interests of residents.

13. Articulation between the College and public secondary schools needs much improvement, particularly in the guidance, community service, and occupational program areas.

14. The numbers of Montgomery County adult residents who have not completed elementary or high school, and the trend for increasing numbers of high school graduates whose grade averages place them in the middle and lower thirds of their graduating classes to enroll at Montgomery College reveal the need for developmental and vestibule programs and educational services. These programs and services could also serve persons who desire to pursue college programs with prerequisites which were not taken in high school.

15. Educational programs and services provided by various County organizations such as the County Recreation Department, the Adult Education Department of the Montgomery County Public Schools, and Montgomery College should not be permitted to unnecessarily duplicate or compete. Of particular concern should be the funding aspects of course offerings where the College can utilize available State funds to support their offerings compared to other agencies which are restricted to funds available only from tuition fees and local tax revenues.

16. Throughout this report a need is expressed for more adequate transportation facilities and college activities located close to the more populous areas of the County so more citizens of all ages can avail themselves of the academic and community services offered by the College. Therefore, methods need to be found by which academic credit as well as non-credit offerings can be made more accessible to residents living in areas not in easy proximity to existing campuses. Students should be permitted to enroll at the same time for part of their classes on each campus, or at one or more places where classes are offered.

17. The differentiation between the credit curricula and courses and the community service offerings of the College does not appear warranted. Neither mode of instruction, time of day, nor location of offering should determine whether offerings will carry academic college credit. Programs in the "down county" area should be more nearly a unified effort of the College.

Part III - Recommendations

Based upon the findings and conclusions of the study and the deliberations of the committee, it is recommended that:

1. The College should prepare and adopt both a short-range and a long-range plan for a program of curricula, courses, and services in the "down county" area, in addition to those already offered on the Takoma Park Campus. These programs and services should reflect the findings and conclusions of this study.

2. For the short term, every effort should be made in obtaining "down county" facilities to meet the expansion needs of this decade within, or immediately adjacent to, the main transportation corridors to the planned Metro system. In this regard, consideration should be given to utilizing facilities and/or land now surplus to the public school system or other government agencies; use of space in business, industrial, and government buildings; and contracting for any special facilities required to serve short-range technical and vocational education programs.

3. Programs and services to be offered in the "down county" area should be fully coordinated with other Montgomery College campuses in terms of multi-campus enrollment, frequent intercampus bus transportation, and with the Montgomery County public schools in terms of programs and services.

4. Non-traditional as well as traditional modes of instruction (or delivery systems) should be used, including emphasis on extension and open-university concepts, and all institutional resources should be used to develop alternate techniques of delivering collegiate instruction not necessarily found on present campuses.

5. The Board of Trustees should develop means for obtaining citizen participation on a continuing basis in planning and assessing post-secondary educational programs for Montgomery County.

6. The College should be flexible in its style of operation, maintain an ability to respond rapidly to community needs and desires in the establishment of new credit and non-credit courses and educational services, and reflect differences in needs based on changing characteristics of the population.

7. Unlike most four-year public regional or state-wide institutions of higher education, the basic orientation and approach of the entire institution (Montgomery College) should be more community service focused. The community service approach should permeate the entire structure of the institution and never be relegated entirely to the Community Services Division. Administratively and organizationally, this Division is necessary to coordinate, organize, and implement many of the college-to-community and community-to-college relationships and activities. However, the resources of the entire College, not just the Division, should be devoted to community service. Capitalizing upon problems, be they economic, sociological, physical, developmental, etc., as prime opportunities for laboratory experiences to supplement and complement traditional modes of academic study, could mutually enhance both program relevancy and community life and welfare. Various types of surveys, studies, and projects undertaken by students in the social sciences, natural and physical sciences, fine arts, communication arts, etc., as an integral part of the academic programs, would help integrate the College into the fabric of community life in Montgomery County. For the College to expect that all community services will be provided through the Division of Community Services is to avoid the issue and place these activities in less than the most respectable position among the functions of the College. The respectability of this function should rank on an equal plane with the others, including the transfer function.

8. All offerings and programs, whether resulting in academic credit or provided on a non-credit basis, should maintain quality. Quality should be determined on the basis of how well the program accomplishes the goal for which it exists (effectiveness) and the extent to which in the process it elicits from students or participants the best of which they are capable (efficiency).

9. The College should establish numerous types of out-reach activities (college-to-community) to accomplish two major purposes, namely, (1) to improve the general level of knowledge about and understanding of the College, and (2) to more adequately serve the residents of the "down county" area of Montgomery County. Several important actions are needed. They are:

   a. Establish throughout the area satellite centers for instruction (both credit and non-credit) and counseling services at which would be provided, during the day or night, non-laboratory courses in occupational and transfer fields.

b. Establish in conjunction with major industrial, business, or governmental enterprises (on a regularly scheduled basis on their premises), job upgrading (vertical mobility and marginal employee improvement), education and occupational-educational counseling.

c. Determine with leaders of various community organizations how the College can perform a role of mutual assistance.

d. In addition to involving advisory committees in the initiation of programs, they should be involved periodically in the evaluation of programs and products after a program has been initiated.

e. Establish working groups of College faculty and/or other personnel to work with Montgomery County Public School officials and faculty on the opportunities to better articulate programs and services, especially in the areas of guidance and counseling and occupational program planning.

f. Encourage more personal contact between the College staff and faculty and the community for the purpose of making a greater intellectual contribution to community life in the form of concerts, forums, debates, and guest speakers from academic, government, and diplomatic life.

10. Associate degree programs should be offered or expanded in the following fields, some of which are partially offered at the present time:

a. Human Services Associate - this program would prepare paraprofessionals to work in social, community, and educational services in such settings as child-care agencies, family service agencies, hospitals, mental health centers, public welfare departments, schools and rehabilitation agencies. Internships in one or more areas of human services would be included in the final phases of the curriculum.

b. Air Conditioning and Refrigeration/Heating Technology

c. Business Administration - options in Middle Management Business Executive, Real Estate, Finance, Insurance, Marketing, and Small Business Management

d. Vehicle Maintenance - options in Automotive Mechanics, Truck Mechanics, Construction Equipment Mechanics, and Small Engine Mechanics

e. Agricultural Technology - options in Ornamental Horticulture, Pre-forestry, Pre-veterinary, and Conservation and Park Management

f. Dental Hygiene

g. Bio-Medical Equipment Technology

h. Teacher Education in Technical Fields

i. Licensed Practical Nurse

11. Certificate programs should be offered in the following fields:

a. Transportation - Travel - Tourism

b. Emergency Para-medical Service

c. Air Conditioning and Refrigeration Mechanics in cooperation with the Air Conditioning and Refrigeration Institute

d. Apartment and Public Housing Management

e. Foreign-language Translators

f. Reading Assistants for the public schools

12. Special academic courses should be offered in the following fields:

a. Marine Biology

b. Oceanography

c. Debate

d. Fashion Merchandising

13. Short Course (non-credit) courses or programs should be offered or expanded in the following areas:

a. Refresher courses for persons with degrees in:

- Engineering
- Business Administration

b. Licensing and/or Certification Programs for:

- Electrical Appliance Repair
- T.V./Radio Repair
- Automotive Mechanics
- Day-Care Center Directors and Workers

c. Enrichment courses in management and supervision for:

- Craftsmen who aspire to supervisory positions
- Personnel in local business firms
- Personnel in hospitals
- Personnel in local industries

d. English as a second language

e. New or expanded courses in:

Painting
Photography
Appliance Repair
Interior Design
Applied Psychology
Auto Repair
Real Estate
Child Care
Family Day Care
Physical Fitness For Older Women
Music
Parent Education
Self-Defense
French
Speed Reading
Practical Consumership Topics (including household and consumer economics)
Stock Market Investment
Home Tools & Equipment (skills in use of saws, levels, drill motors, etc.)
Secretarial Skill Refresher
Household Maintenance & Safety (electrical fuses, thermal reset, washers in spigots, furnace filters, etc.)
Pottery

14. Educational services should be strengthened to do the following things:

    a. Broaden the scope and availability of job and career counseling and testing services for individuals of all ages. There is particular need for these services to be available in Montgomery County for mature women.

    b. Increase instructional programs that permit persons without high school diplomas to complete those requirements as they pursue their courses of study.

    c. Place emphasis in the design and conduct of programs and courses to accommodate the identified unique educational needs and goals which allow students to progress at their own pace in an open and facilitating atmosphere.

    d. Increase the opportunities, on an as-needed basis, for persons to acquire basic educational proficiencies necessary for successful achievement in programs of study.

15. Based upon interests expressed by parents, types of educational assistance which should be offered are:

    - Refresher Mathematics
    - Reading Improvement
    - Refresher Secretarial Skills
    - Individual Sport Instruction
    - Individual Music Lessons

16. Recommended cooperative endeavors which should be explored are:

    a. Community Development

    b. Coordination of Volunteer Services

    c. A series of workshop-type sessions with leaders of community organizations to determine what role the College can play in achieving mutually advantageous goals. Avoid mail contacts only, and seek direct contact.

    d. Use community centers and recreation centers to offer courses for credit or non-credit.

17. Other educationally-related endeavors appropriate for the College are:

   a. Establish an international counseling center.

   b. Provide bi-lingual courses and services.

   c. Sponsor area music and drama groups other than those at the College.

   d. Have an information telephone manned during evening and weekend hours.

   e. Open physical education facilities, particularly the swimming pool, to the public.

   f. Develop assembly programs for high schools.

   g. Prepare additional exhibits about the College to be displayed in shopping centers.

   h. Continue the Speakers Bureau - publicize it - actively seek opportunity for College personnel to appear at PTA and Civic Association meetings to talk about the College.

   i. Develop a Labor Studies Center at the College which would deal with such topics as labor management relations, safety and related matters, construction and industry materials and coordination, contribution of the labor movement to United States history, and goals and purposes of the labor unions.

18. If the College is to become a cultural-educational center for Montgomery County to serve residents more adequately, not only will there need to be continued use of various public communication media, but also the establishment of many direct interpersonal relationships with community groups and agencies. For example, counselors who devote time at an industry location counseling working men and women and finding out what employers expect can vitalize the counseling function back on campus. Instructors who provide job-upgrading or retraining courses for employees can inject more realism into campus courses. Workshop sessions with community leaders can not only reveal community needs but also result in cooperative educational-cultural endeavors.

19. The Board of Trustees should implement the recommendations of this study. All possible sources of funds under federal titles should be explored. It is essential that more adequate staffing and funding to support the institutional research and development and community services units of the College be provided, and there should be in-service improvement of the College faculty and guidance and counseling staff. If for any reason the College organization finds itself unable to respond efficiently to proven community needs, the community services unit should be enabled to offer new college academic credit courses and/or programs, wherever and whenever they are needed to serve the people in the County.

CHAPTER II

CHARACTERISTICS AND FORECASTS OF THE POPULATION

Introduction

In this chapter, the data presented describe trends in population change in Montgomery County and give selected characteristics of population in the "down county" area. Forecasts of population are also presented.

Factors Affecting Population Growth

The two major components of population growth are migration from other areas and natural increase (excess of births over deaths). During the 1960 decade, 71 percent of Montgomery County's population growth was due to migration. The sharp decline in general fertility rates in Montgomery County, while following the national pattern, has been consistently greater than for the country as a whole. Several factors have contributed to this. There is a larger proportion of single women in the county than in the nation (24 percent compared to 14 percent), higher levels of education and income, and later marriages. These factors contribute to low fertility rates. However, during the next decade, persons born during the high fertility years 1955-1961 will reach peak childbearing age, thus one might expect that the natural increase will rise from its all time low. The number of women age 20-29 in Montgomery County is expected to increase by 57 percent between 1970 and 1980,while the total population is expected to increase by 33 percent. Migration will depend largely upon the future of the Washington area basic industry sector. People are migrating from the central city of Washington to the suburbs.

Population Forecasts

From 1950 to 1972, the Montgomery County population increased from 10.9 percent to 18.7 percent of the greater Washington area. The average increase since 1960 has been 18 percent or about 18,500 people per year. The county population is expected to stabilize when it comprises 20-25 percent of the total population in the greater Washington area. An average annual increase of 16,730 persons per year is projected over the next decade. Total population has been forecast to increase from 522,809 in 1970 to 696,500 in 1980 and 747,000 in 1983.[1] Shown in Table 1 are total population projections by age category for Montgomery County. Observation of the data reveals expected shifts in age composition of the population. A decline is expected in the proportion to youth age 14 and under. The next largest change will be in the larger proportions of persons age 25-44 and in the older age group of 65 and over. The expected change in structure is given in Figure 1.

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[1] Montgomery County Planning Board and Maryland-National Capital Park and Planning Commission, Population and Household Growth Forecast, 1972-1982, October 1972, p. 10; and Population and Household Growth Forecast, 1973-1983, October 1973, p. 30.

TABLE 1

PROJECTED CHANGES IN POPULATION AGE STRUCTURE IN MONTGOMERY COUNTY, 1970-1980

Age Group	1970		1980	
	Number	Percent	Number	Percent
0-14	155,781	29.8	157,233	22.6
15-19	48,673	9.3	64,755	9.3
20-24	35,714	6.8	57,838	8.3
25-44	139,345	26.7	208,733	30.0
45-64	110,677	21.2	152,660	21.9
65 and over	32,619	6.2	55,281	7.9
Totals	522,809	100.0	696,500[*]	100.0

Source: Montgomery County Planning Board and Maryland-National Capital Park and Planning Commission, Population and Household Growth Forecast, 1972-1982, October 1972, p. 10.

Presented in Table 2 are data by Census Tract on the 1970 age composition of population in the "down county" area. The area was broken arbitrarily into five sub-areas geographically as shown in Figure 2. The Census Tract numbers shown in Table 2 correspond to the numbers shown on the map. It is possible, for example, to determine the exact location where there are unusually large concentrations of persons age 65 and over. While the percentage of persons in this age group comprised 6.2 percent of the total county population, well over a fifth of the persons living in Census Tract number 7029, the area bordered by Georgia Avenue, Beltway, Sligo Creek Road, Spring and Wayne Avenues, were age 65 and over. If the College wished to locate activities of special possible interest to senior citizens or to plan a bus route to pick them up, this would be one area for consideration. Likewise, it can be determined that the largest proportion of children age 3-17 live in the area bounded by Veirs Mill Road, Randolph Road, and Valleywood Drive.

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[*] A low projection for 1980 of 759,837 and a most probable projection of 780,000 persons were made earlier by Hammer, Greene, Siler Associates, The Economy of Metropolitan Washington (Washington D.C.: The Associates), 1969.

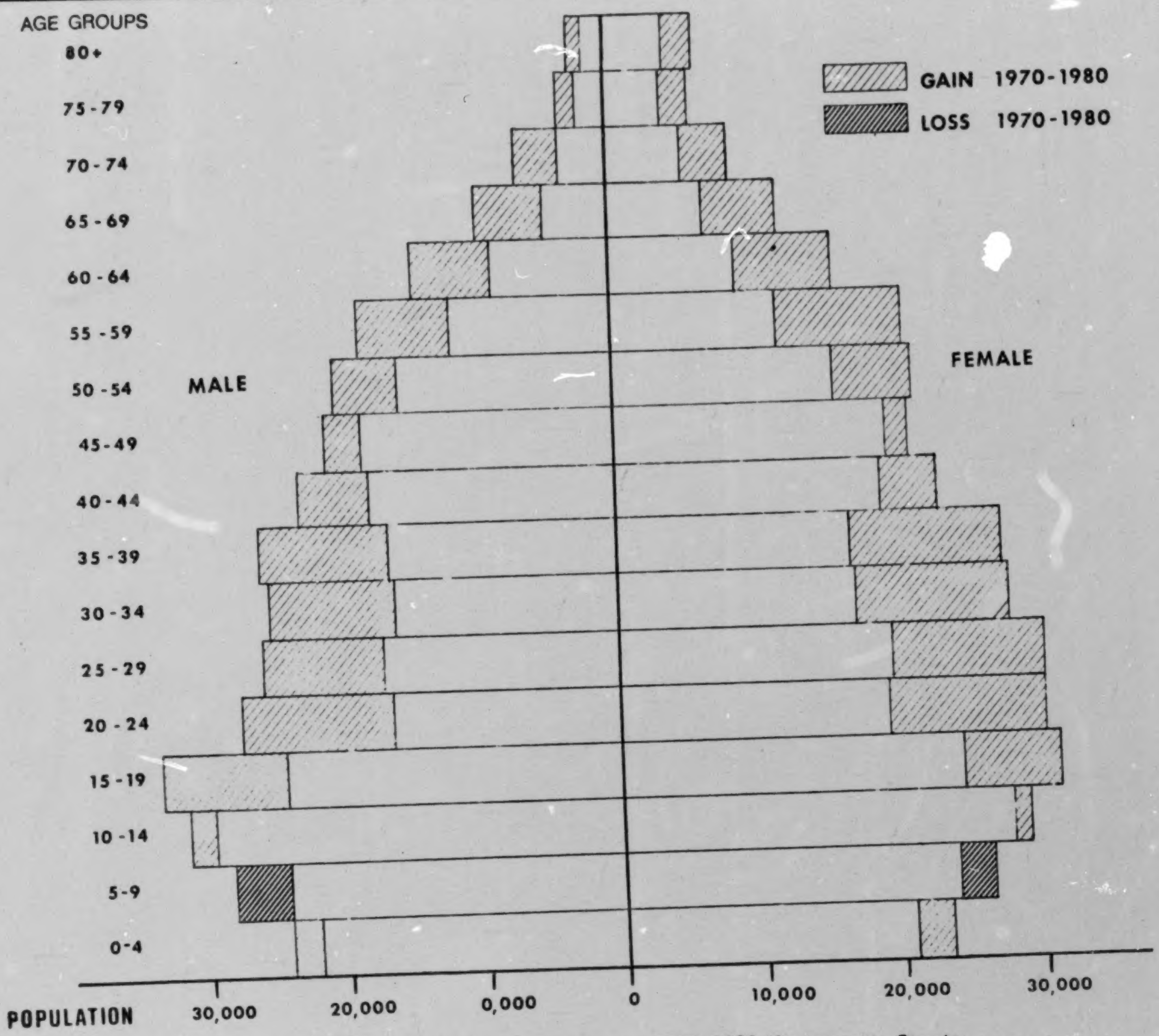


Figure 1. Population Structure 1970-1980 Montgomery County

TABLE 2

AGE DISTRIBUTION FOR SELECTED CENSUS TRACTS IN MONTGOMERY COUNTY BY PERCENT

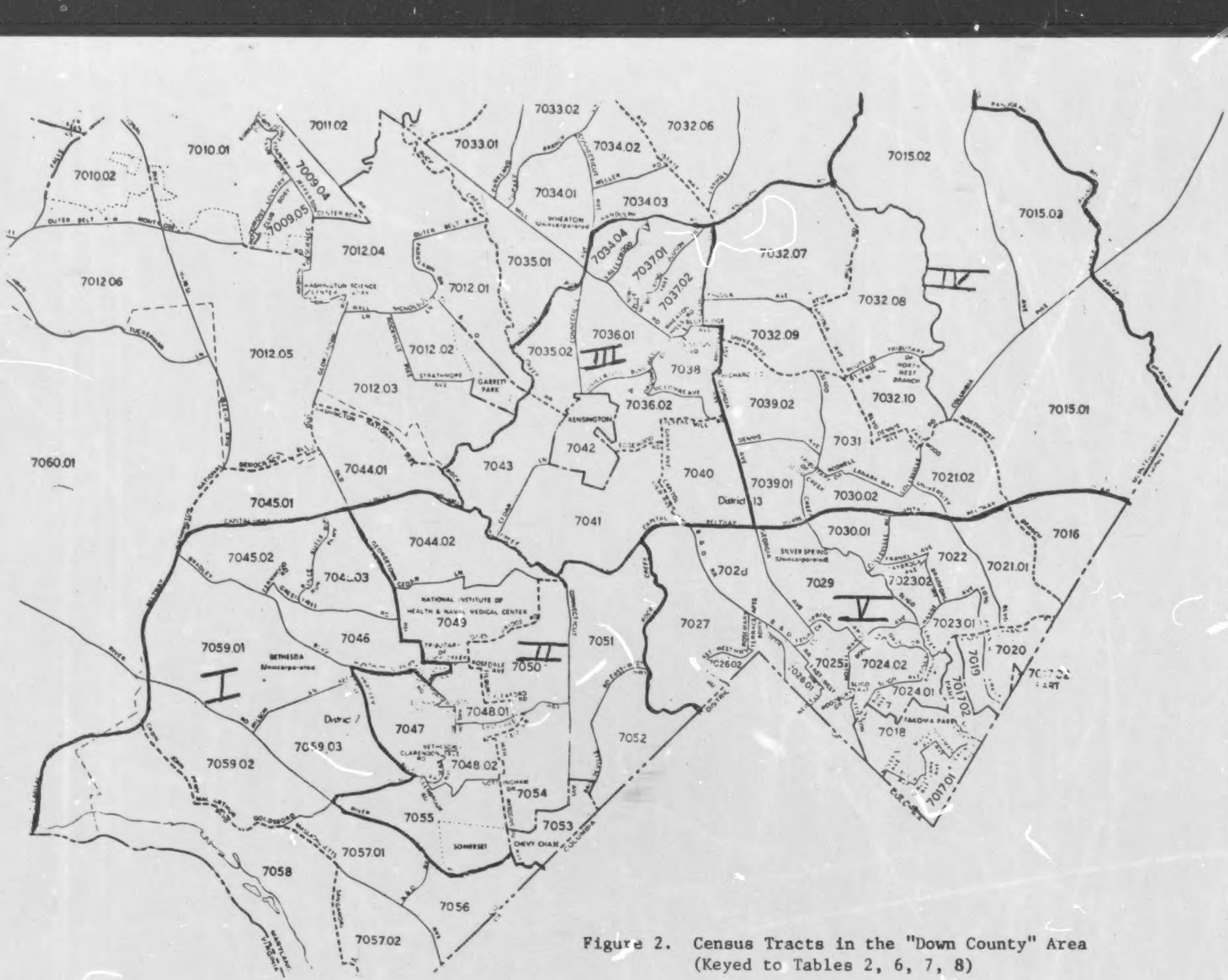
Tract	0-14		15-19		20-24		25-44		45-64		65 & Over	
	M	F	M	F	M	F	M	F	M	F	M	F
Group I												
7045.02	36.3	33.7	13.7	12.4	3.9	3.0	18.7	24.3	25.3	22.0	2.1	4.6
7045.03	32.4	29.8	11.6	9.2	4.7	4.5	23.5	26.2	23.3	24.2	4.3	6.1
7046.00	26.0	22.1	8.6	8.0	3.9	5.3	27.9	27.8	26.5	27.6	7.2	9.2
7056.00	16.8	13.1	6.0	5.1	5.1	6.3	28.0	25.6	32.3	35.5	11.8	14.3
7057.01	29.7	23.3	11.2	10.3	4.7	5.2	19.3	23.3	28.1	28.0	6.9	9.9
7057.02	28.9	25.5	10.2	10.6	4.8	5.6	18.9	22.8	31.1	28.7	6.2	6.8
7058.00	28.7	25.8	9.6	9.4	5.8	4.7	22.5	22.9	26.3	27.8	6.9	9.3
7059.01	32.0	30.4	13.3	11.4	4.1	3.5	16.9	25.8	30.6	25.0	3.0	3.9
7059.02	31.8	29.2	12.1	11.1	3.5	3.7	18.8	23.5	30.2	27.5	3.5	5.2
7059.03	28.5	25.7	12.9	12.3	4.5	3.9	17.4	24.2	31.8	27.8	4.8	6.1
Total	28.5	24.9	10.7	9.6	4.6	4.7	21.5	24.7	28.7	28.0	6.0	8.0
Group II												
7044.02	28.4	23.8	12.3	11.2	4.4	5.8	20.4	24.4	30.0	28.2	4.4	6.5
7047.00	28.1	23.8	9.5	8.9	5.0	4.2	20.9	23.4	27.0	27.2	9.6	12.5
7048.01	13.0	8.1	5.2	3.8	11.3	15.7	37.8	29.9	23.9	29.4	8.7	13.2
7048.02	16.7	11.7	5.8	6.0	15.9	14.3	33.4	24.5	20.2	25.9	7.9	17.6
7049.00	3.8	9.7	15.9	9.1	51.1	25.4	21.5	25.8	6.6	24.5	1.0	5.4
7050.00	26.3	21.8	7.2	7.7	5.2	5.4	24.8	23.4	28.1	28.4	8.4	13.2
7051.00	26.4	21.1	10.5	9.9	4.5	3.6	17.0	20.0	30.6	29.5	11.2	15.9
7052.00	26.2	22.7	10.9	9.6	4.5	4.9	18.9	22.9	30.2	28.7	9.4	11.1
7053.00	30.2	27.3	12.3	12.2	4.9	3.8	16.5	20.0	28.3	25.8	7.8	11.0
7054.00	31.0	26.8	10.1	10.3	3.2	3.3	21.6	23.9	23.4	22.9	10.5	12.8
7055.00	22.1	18.1	10.5	8.7	5.3	4.2	18.6	20.1	32.4	36.2	11.3	12.7
Total	23.9	20.2	9.9	8.8	8.8	6.7	22.3	23.1	26.6	28.5	8.6	12.7
Group III												
7034.04	40.5	40.0	9.6	8.7	5.7	7.5	28.9	28.6	14.2	13.5	1.2	1.8
7035.02	37.2	35.9	11.5	10.3	4.8	5.1	26.8	29.2	17.6	16.4	2.0	3.3
7036.01	29.6	28.6	11.6	10.0	6.9	6.7	25.8	28.3	23.0	21.6	3.0	5.0
7036.02	28.8	27.9	12.2	10.1	6.3	6.6	24.1	23.2	23.1	21.6	5.4	10.6
7037.01	39.1	34.1	10.3	9.5	4.3	5.4	27.2	30.7	17.2	17.0	1.9	3.3
7037.02	32.2	30.8	10.7	8.2	6.2	5.9	24.6	25.2	23.1	24.1	3.1	5.8
7038.00	27.4	23.1	9.2	9.5	8.2	6.9	21.8	19.8	24.5	27.2	8.9	13.7
7040.00	25.5	22.3	9.1	7.6	7.1	8.4	25.9	25.2	26.0	26.3	6.5	10.2
7041.00	29.3	28.5	13.1	10.8	5.3	5.4	18.6	22.0	27.6	26.3	6.1	6.9
7042.00	25.6	20.3	10.7	8.4	7.0	6.9	21.5	19.6	25.6	27.9	2.5	16.7
7043.00	33.3	28.3	9.7	8.5	4.2	5.2	25.1	26.8	22.8	24.4	4.7	6.7
Total	31.8	29.2	10.8	9.3	5.8	6.4	24.8	25.8	22.4	22.3	4.4	7.0

TABLE 2 (Continued)

AGE DISTRIBUTION FOR SELECTED CENSUS TRACTS IN MONTGOMERY COUNTY

	0-14		15-19		20-24		25-44		45-64		65 & Over	
Tract	M	F	M	F	M	F	M	F	M	F	M	F
Group IV												
7015.01	23.5	21.5	10.6	10.7	9.5	11.5	27.3	26.1	24.9	23.5	4.0	6.8
7015.02	32.0	30.0	13.1	12.0	4.1	3.9	21.0	25.3	26.1	23.3	3.9	5.6
7015.03	38.3	35.3	11.1	11.0	4.0	3.2	24.0	27.6	19.9	17.2	2.7	5.8
7021.02	30.0	26.3	9.3	9.2	6.5	5.4	21.5	22.0	27.6	28.3	5.2	8.8
7030.02	27.0	26.1	10.6	8.2	6.6	6.1	21.5	23.5	28.1	28.3	6.3	7.8
7031.00	29.4	25.2	13.1	10.8	4.8	5.3	21.9	24.7	26.4	26.7	4.2	7.4
7032.07	31.9	27.5	7.1	6.4	8.6	13.8	36.0	32.8	13.1	13.8	3.1	5.9
7032.08	35.2	31.6	11.3	12.1	4.3	3.2	21.3	26.9	25.3	20.3	2.6	5.8
7032.09	23.0	18.6	10.1	10.1	8.4	10.7	22.3	23.0	29.5	29.7	6.8	7.8
7032.10	30.2	29.5	13.4	11.7	5.1	4.6	20.9	25.8	27.9	24.7	2.6	3.8
7039.01	28.7	26.5	11.9	10.5	5.3	5.6	18.8	21.9	29.1	28.9	6.2	6.6
7039.02	32.4	27.8	10.1	9.1	5.3	6.7	26.0	27.7	22.4	23.2	3.9	5.5
Total	30.0	26.9	11.0	10.3	6.3	7.1	24.2	26.0	24.5	23.2	4.0	6.4
Group V												
7016.00	30.1	28.8	8.7	8.9	10.2	11.7	28.2	26.4	19.7	19.0	3.0	5.1
7017.01	25.6	23.8	7.2	8.2	13.2	12.2	29.0	23.5	16.1	18.1	8.9	14.1
7017.02	21.8	14.9	7.7	11.0	20.9	22.7	28.6	24.9	14.9	16.1	6.0	10.5
7018.00	23.9	19.0	8.9	12.2	11.4	13.3	28.7	26.0	20.1	19.7	7.0	10.0
7019.00	18.0	16.2	6.0	6.3	18.9	20.4	32.7	22.6	16.1	21.5	8.2	13.0
7020.00	31.7	28.2	9.9	9.2	10.9	12.1	26.0	24.6	16.9	20.0	4.6	5.8
7021.01	26.9	26.2	11.5	11.6	4.9	6.5	20.8	22.4	31.6	27.1	4.3	6.1
7022.00	23.5	19.9	9.1	8.2	7.1	6.2	21.2	20.9	29.8	33.5	9.3	11.4
7023.01	25.1	20.2	6.6	7.4	15.1	15.1	28.3	25.7	17.1	21.6	7.7	9.9
7023.02	25.1	20.6	6.5	7.8	11.4	12.9	26.5	24.2	24.4	27.1	6.1	7.4
7024.01	24.2	19.9	7.0	5.9	8.6	9.6	28.6	26.1	22.5	26.5	9.1	12.0
7024.02	18.7	16.0	5.4	6.4	12.3	14.1	29.7	22.9	23.5	26.6	10.4	14.0
7025.00	15.6	10.1	4.3	4.6	12.4	15.4	38.6	25.9	17.5	24.0	11.5	20.0
7026.01	5.3	3.9	3.2	1.8	4.9	4.9	18.4	11.8	34.2	38.1	33.8	39.3
7026.02	18.1	13.6	7.1	5.4	14.9	13.1	27.7	23.6	20.9	26.8	11.3	17.4
7027.00	25.7	23.4	8.5	7.2	11.8	11.5	27.0	28.1	22.0	23.1	5.2	6.7
7028.00	17.7	14.3	6.2	5.8	8.8	11.0	29.0	23.2	27.8	30.5	10.3	15.1
7029.00	19.6	16.3	8.7	8.0	5.8	4.3	19.3	17.7	32.3	33.4	14.1	20.3
7030.01	26.6	24.1	8.6	7.5	4.7	5.5	21.8	22.9	29.2	29.8	9.2	10.3
Total	23.2	19.3	7.7	7.6	11.1	11.8	27.0	23.7	22.4	25.0	8.6	12.5

SOURCE: 1970 Census of Population and Housing, Census Tracts, Washington, D.C. SMSA (PHC(1)-226) Table 1.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7036.02
7038
7032.07
7032.08
7032.09
7032.10
7015.02
7015.03
7015.01
7039.02
7039.01
7031
7030.02
7030.01
7021.02
7021.01
7016
7022
7023.02
7023.01
7020
7019
7017.02
7017.01
7018
7024.02
7024.01
7025
7026.01
7026.02
7029
7027
7028
7040
District 13
7041
7042
7043
7044.01
7044.02
7060.01
7045.01
7045.02
7044.03
7049
NATIONAL INSTITUTE OF HEALTH & NAVAL MEDICAL CENTER
7046
7059.01
BETHESDA (Unincorporated)
7050
7051
7052
7047
7048.01
7048.02
7059.03
7059.02
District 7
7054
7053
7055
SOMERSET
CHEVY CHASE
7057.01
7058
7056
7057.02
I
II
III
IV
V
SILVER SPRING (Unincorporated)
WHEATON (Unincorporated)
KENSINGTON
GARRETT PARK
TAKOMA PARK
WASHINGTON SCIENCE CENTER
MARYLAND
VIRGINIA

Figure 2. Census Tracts in the "Down County" Area
(Keyed to Tables 2, 6, 7, 8)

"Down County" Area Population and Housing Forecasts

Shown in Table 3 are data on the population-holding capacity of total vacant land in each area based upon existing and/or proposed zoning of the land. These computations are based upon the average number of persons known to inhabit different types of dwelling units of the type which can be constructed on vacant land according to existing or proposed zoning of the land. Of the 72,833 increase in population possible in the "down county" area, 83.6 percent is in an area which has existing sewer service or in which sewer service is under construction. Another 7.2 percent lies in an area in which sewer service is expected to be available by 1974; only 9.2 percent is expected to be on vacant land for which sewer service is over 10 years away. Of the total population increase possible, 71.4 percent is expected in Potomac, Bethesda, and North Bethesda in areas where sewer service is either now available or under construction. The major population growth will be in the southwest part of the "down county" area.

The rest of the area is largely built up, with only a few remaining vacant land parcels. Most of these are located in single-family neighborhoods and are suitable for odd-lot type developments limited in size. Most of the future building activity will be the result of redevelopment activity on already developed land parcels, especially around the Metro-

TABLE 3

ESTIMATED POPULATION CAPACITY IN VACANT LAND
BY SEWER SERVICE CATEGORY

Area	Existing Service	Under Constr.	2 Yr. Constr.	3-10 Yr Constr.	Outside 10 Yr. Service	Total Population
Potomac	2,023	14,268	4,916	--	6,754	27,961
Bethesda	4,108	3,342				7,450
N. Bethesda	13,268	6,442	295			20,005
Wheaton	3,739	3,140				6,879
Silver Sprg.	1,585					1,585
Takoma Park	132					132
Kemp Mill	7,522	269				7,791
White Oak	1,030					1,030
Total "Down County" Area	33,407	27,461	5,211	--	6,754	72,833
Montgomery Co.	89,959	204,519	81,520	86,023	372,408	834,429

Source: Montgomery County Planning Board and Maryland-National Capital Park and Planning Commission, Population and Household Growth Forecast, 1973-1983, p. 43.

transit station areas. Expected intensification of zoning around Metro station sites is expected to encourage land assembly and large-scale redevelopment.

Shown in Table 4 are existing and projected population and housing units for Montgomery County and the "down county" area. While population is expected to increase by 28.9 percent in the county by 1983, the increase in the "down county" area is expected to be only 12.7 percent. Even so, over one-half (56 percent) of the total county population will be in the "down county" area. The number of housing units is expected to increase 29.5 percent in the county and 12.5 percent in the "down county" area. Major population growth in the county will be outside the "down county" area.

TABLE 4

EXISTING AND PROJECTED POPULATION AND HOUSING UNITS IN THE "DOWN COUNTY" AREA

Area	Number 1973		Estimated 1983		Percent Increase 1973-1983	
	Housing Units	Population	Housing Units	Population	Housing Units	Population
Potomac	8,024	30,640	11,474	42,640	43.0	39.2
Bethesda	30,539	92,050	42,385	102,050	12.2	10.9
N. Bethesda	10,939	34,425	13,341	42,425	22.0	23.2
Wheaton	25,700	88,706	26,829	92,206	4.4	3.9
Silver Spring	15,398	35,730	17,877	44,730	16.1	25.2
Takoma Park	10,438	28,149	10,705	28,949	2.6	2.8
Kemp Mill	11,213	37,015	12,182	39,515	8.6	6.8
White Oak	9,121	30,286	9,781	32,286	7.2	6.6
Total "Down County" Area	121,372	377,001	136,574	424,801	12.5	12.7
Montgomery Co.	179,539	579,700	232,459	747,000	29.5	28.9

Source: Montgomery County Planning Board and Maryland-National Capital Park and Planning Commission, Population and Household Growth Forecast, 1973-1983, p. 41.

Presented in Table 5 are the number of building permits issued for dwelling units in Montgomery County and in the "down county" area. By examining the data, one can see that most of the building activity in the "down county" area, in fact 79.7 percent, was in the Potomac, Bethesda, and North Bethesda area. Permits issued in the "down county" area comprised 23.9 percent of all permits for dwelling construction in the county. Data indicate that there has been no substantial residential development during the period January 1971-June 1973 in the Silver Spring, Takoma Park, Wheaton, or Kemp Mill areas.

TABLE 5

NUMBER OF BUILDING PERMITS ISSUED "DOWN COUNTY" FOR DWELLING UNITS JANUARY 1971 - JUNE 1973

Area	Jan-Dec 1971	Jan-Dec 1972	Jan-June 1973	Totals Jan./71-June/73
Potomac	839	619	253	1,711
Bethesda	764	632	387	1,783
N. Bethesda	152	1,258	36	1,446
Wheaton	361	3	14	378
Silver Spring	8	--	5	13
Takoma Park	7	--	--	7
Kemp Mill	25	--	4	29
White Oak	101	714	16	831
Total "Down County" Area	2,257	3,226	715	6,198
Montgomery Co.	10,554	10,605	4,715	25,874

Source: Montgomery County Planning Board and Maryland-National Capital Park and Planning Commission, Population and Household Forecast, 1973-1983, p. 45.

Ethnic Background

In 1970, the population of Montgomery County consisted of 94.5 percent white, 4.1 percent Negro, and 1.4 percent with "other" ethnic backgrounds. (Of the "other" ethnic categories, 36.8 percent were Chinese, 17.3 percent were Japanese, 7.8 percent were Filipino, 5.6 percent were Indian, and 32.5 percent was a mixture of many others.)[2] Shown in Table 6 are the percentages, by Census Tract, in the "down county" area of the population which were Negro or Spanish. Observation reveals that, except for three Tracts, there are persons of Spanish background living throughout the "down county" area. Black people live in every Tract. Data in Table 6 may be used in conjunction with those in Table 7. For example, it can be determined that in Census Tract 7020.00 -- where 14.8 percent of the residents are Negro and 13.9 percent are Spanish -- 36.9 percent of the persons over age 25 have not completed high school. This information could be useful in locating outreach activities to serve certain needs of residents.

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[2] U.S. Department of Commerce, Bureau of the Census, General Population Characteristics, 1970 Census of Population, Maryland, Table 34.

There are 17 public schools in the "down county" area with minority group percentages greater than 15 percent.[3] In 12 of these schools the percentage is above 25 percent, with Rosemary Hills (72 percent), Woodside (40 percent), New Hampshire Estates (64 percent), Takoma Elementary (53 percent), Piney Branch Middle School (42 percent), and Takoma Junior High School (41 percent) showing significantly higher percentages. School officials concluded that although " . . . minority group enrollment at the (Rock Creek Forest) school should be gradual over the next year or two . . . the proximity of the school to the District (District of Columbia) line, coupled with an ever increasing number of minority group families moving into the Silver Spring area, makes for a volatile situation with regard to housing patterns."

Public schools serving areas where federally-assisted or county-sponsored housing exists or will be extended can expect continued and substantial yearly minority group increases. Rock Creek Forest and Holiday Park schools are examples. Schools near the District of Columbia located in areas with substantial numbers of multi-family dwelling units, such as Montgomery Hills, may reach a 40-50 percent minority group enrollment composition, depending on changing housing patterns in the Silver Spring area. The sewer moratoriums, energy crisis, and high cost of out-county housing are seen as factors limiting outward migration of white families and in turn limiting immigration " . . . which has been to this point largely minority group families."

Montgomery County Public School District planners assert that " . . . any breakdown in the apparent resistance to minority group enrollment could result in a rapid and dramatic increase in minority group enrollment." Such a conclusion seems valid for all of the southern portion of the "down county" area, with Montgomery Blair High School and surrounding feeder schools (New Hampshire Estates, Rolling Terrace, Oak View, and Takoma Park elementary schools; and Piney Branch, Middle, and Takoma Park junior high schools) all among the highest minority group percentages. These data indicate that the area is in a state of gradual sociological and economic transition.

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[3] Unpublished Statistics from the Montgomery County Public Schools, 1968-1973.

TABLE 6

PERCENT OF ALL PERSONS WHOSE ETHNIC BACKGROUND IS NEGRO OR SPANISH FOR SELECTED CENSUS TRACTS IN MONTGOMERY COUNTY

Census Tracts	Percent Negro	Percent Spanish	Census Tracts	Percent Negro	Percent Spanish
Group I			Group IV		
7045.02	0.5	2.7	7015.01	3.2	1.9
7045.03	0.5	0.8	7015.02	2.7	1.9
7046.00	0.9	2.5	7015.03	4.9	1.8
7056.00	0.3	5.7	7021.02	0.2	0.6
7057.01	0.3	7.1	7030.02	2.4	0.0
7057.02	0.7	4.4	7031.00	0.9	5.6
7058.00	2.3	4.4	7032.07	4.5	1.8
7059.01	0.9	4.9	7032.08	7.1	1.0
7059.02	1.7	7.6	7032.09	1.0	1.9
7059.03	1.0	3.2	7032.10	1.9	3.7
			7039.01	2.9	0.8
Group II			7039.02	5.0	4.6
7044.02	0.6	7.1			
7047.00	0.8	0.8	Group V		
7048.01	1.3	4.2	7016.00	2.1	2.2
7048.02	1.2	12.7	7017.01	10.3	6.0
7049.00	6.1	0.8	7017.02	5.1	7.6
7050.00	2.0	5.3	7018.00	24.6	2.8
7051.00	0.9	0.7	7019.00	1.5	1.5
7052.00	0.7	4.9	7020.00	14.8	13.9
7053.00	0.9	0.0	7021.01	2.8	0.0
7054.00	1.1	3.0	7022.00	1.5	1.7
7055.00	1.1	1.0	7023.01	3.3	9.9
			7023.02	4.9	3.9
Group III			7024.01	3.5	3.4
7034.04	4.7	2.7	7024.02	4.5	4.4
7035.02	11.5	5.0	7025.00	15.7	4.8
7036.01	1.4	5.3	7026.01	1.0	1.9
7036.02	0.7	0.8	7026.02	6.9	6.9
7037.01	1.2	2.9	7027.00	14.2	9.0
7037.02	1.1	0.9	7028.00	6.5	1.1
7038.00	3.1	3.8	7029.00	2.5	4.1
7040.00	3.2	3.7	7030.01	0.4	4.7
7041.00	1.0	3.5			
7042.00	1.9	2.2			
7043.00	0.3	1.6			

Source: 1970 Census of Population and Housing, Census Tracts, Washington, D.C. SMSA (PHC(1)-226) Tables 1 and 2.

Educational and Economic Characteristics in the "Down County" Area

Shown in Table 7 for each Census Tract in the "down county" area is the median level of education completed by persons age 25 and over. One can determine, for example, that the highest median level of education is possessed by persons living in sub-group area I in Figure 2. In this region, a median level of education of more than a college degree is possessed by all persons age 25 and over living in an area bounded by River Road, the Beltway, Goldsboro Road, and Cabin John Parkway-MacArthur Blvd. The lowest median level of education is possessed by people in the area having the largest percentage of persons age 65 and over. The types of programs and services a college would offer in the two areas would need to be different in several important respects.

Shown also in Table 7 are the numbers of persons age 25 and over in 1970 who had not graduated from high school. Numbers by Census Tract are presented for persons who had completed 1-3 years of high school and for persons who had never attended high school. The percentages of all persons over age 25 whose educational attainment was reported to be less than high school graduation, within each group shown in Figure 2, are as follows:

Group I	- 17.3%	Group IV	- 18.3%
Group II	- 14.3%	Group V	- 26.5%
Group III	- 22.8%		

In both Montgomery County and in the "down county" area, 20.5 percent of all persons over age 25 had not graduated from high school. The "down county" area contains 56.3 percent of all persons in the county over age 25, and 56.1 percent of all persons over age 25 without a high school education. Undoubtedly some of these people are senior citizens.

Data were available for other age groups in Montgomery County which throw some additional light on the matter. Of the males age 20-49, 5 percent had not attended high school, and 8 percent had completed 1-3 years of high school. The percentages represented 5,044 and 8,074 males, respectively. Of the females age 15-44, 21.3 percent had completed 1-3 years of high school, and 4.9 percent had not attended high school. These percentages represented 24,752 and 5,655 females, respectively. There are, then, 10,699 persons of working age who did not attend high school and an estimated 16,000 more over age 20 who had some high school but did not graduate.

TABLE 7

NUMBER OF PERSONS WITH LESS THAN HIGH SCHOOL GRADUATION, AND MEDIAN SCHOOL YEARS COMPLETED BY PERSONS OVER AGE 25, FOR SELECTED CENSUS TRACTS IN MONTGOMERY COUNTY

Groups	1-3 Years H.S.	Less Than H.S.	Total Age 25 & Over	Median Years Completed	Groups	1-3 Years H.S.	Less Than H.S.	Total Age 25 & Over	Median Years Completed
Group I	1,646	3,252		16.1	Group IV	3,324	3,341		13.0
7045.02	63	86	1,463	16.0	7015.01	664	698	7,212	13.4
7045.03	128	126	2,670	15.4	7015.02	248	206	3,425	14.7
7046.00	199	159	3,507	15.5	7015.03	290	316	3,457	13.4
7056.00	421	267	4,738	15.0	7021.02	201	228	2,422	13.0
7057.01	135	122	2,705	16.1	7030.02	152	146	1,432	12.8
7057.02	104	120	2,532	16.2	7031.00	214	309	2,682	12.8
7058.00	383	374	3,067	13.9	7032.07	224	239	2,683	13.9
7059.01	40	114	2,500	16.4	7032.08	213	159	2,965	14.6
7059.02	62	110	2,301	16.6	7032.09	358	352	2,880	12.7
7059.03	111	128	2,881	16.1	7032.10	168	123	2,124	13.0
					7039.01	151	114	1,697	13.5
Group II	1,724	1,857		15.8	7039.02	441	451	3,611	12.7
7044.02	104	119	2,584	14.8					
7047.00	177	203	2,785	16.0	Group V	5,828	6,096		12.7
7048.01	186	214	1,786	13.3	7016.00	516	247	3,565	12.7
7048.02	383	409	2,924	12.8	7017.01	401	435	2,191	12.4
7049.00	52	93	592	12.7	7017.02	239	211	1,729	12.7
7050.00	265	248	2,403	13.5	7018.00	385	361	2,840	12.8
7051.00	164	221	3,297	15.8	7019.00	233	309	1,595	12.6
7052.00	107	106	2,398	16.1	7020.00	372	466	2,273	12.4
7053.00	48	49	1,285	16.2	7021.01	147	120	1,454	12.9
7054.00	85	57	1,894	16.3	7022.00	235	326	2,742	13.0
7055.00	153	138	3,020	16.2	7023.01	357	280	2,061	12.6
					7023.02	306	240	1,970	12.7
Group III	3,062	2,459		12.8	7024.01	425	311	2,857	12.8
7034.04	288	175	1,503	12.4	7024.02	449	355	2,873	12.7
7035.02	273	224	1,952	12.8	7025.00	261	318	1,780	12.6
7036.01	402	234	2,845	12.8	7026.01	228	619	2,017	12.3
7036.02	311	202	1,820	12.6	7026.02	385	678	3,978	12.7
7037.01	382	227	2,058	12.5	7027.00	139	74	1,406	13.8
7037.02	355	333	2,343	12.5	7028.00	356	332	3,211	12.9
7038.00	70	153	780	12.5	7029.00	321	334	3,774	13.5
7040.00	400	446	3,916	12.8	7030.01	73	80	685	13.4
7041.00	202	141	2,913	15.7					
7042.00	164	142	1,349	12.8					
7043.00	215	182	2,721	14.1					

Source: 1970 Census of Population and Housing, Census Tracts, Washington, D.C. SMSA, (PHC(1)-226) Table 2, and General Social and Economic Characteristics, Table 120.

TABLE 8

PERCENT OF ALL PERSONS BELOW POVERTY LEVEL FOR SELECTED CENSUS TRACTS IN MONTGOMERY COUNTY

Census Tracts	Percent	Census Tracts	Percent
Group I		Group IV	
7045.02	0.3	7015.01	3.7
7045.03	1.9	7015.02	2.2
7046.00	3.1	7015.03	1.4
7056.00	4.4	7021.02	1.3
7057.01	3.4	7030.02	5.0
7057.02	1.5	7031.00	4.8
7058.00	5.5	7032.07	4.0
7059.01	3.6	7032.08	2.1
7059.02	4.2	7032.09	1.5
7059.03	2.0	7032.10	0.9
		7039.01	1.9
Group II		7039.02	1.8
7044.02	4.7		
7047.00	3.2	Group V	
7048.01	3.6	7016.00	4.7
7048.02	10.1	7017.01	7.8
7049.00	7.6	7017.02	11.4
7050.00	3.9	7018.00	10.1
7051.00	2.7	7019.00	11.4
7052.00	3.0	7020.00	10.6
7053.00	3.1	7021.01	1.3
7054.00	4.5	7022.00	3.0
7055.00	2.3	7023.01	7.4
		7023.02	5.9
Group III		7024.01	4.2
7034.04	5.6	7024.02	4.9
7035.02	4.9	7025.00	12.1
7036.01	8.1	7026.01	10.0
7036.02	3.8	7026.02	9.9
7037.01	2.7	7027.00	4.4
7037.02	2.6	7028.00	5.3
7038.00	1.4	7029.00	5.7
7040.00	3.4	7030.01	3.3
7041.00	3.5		
7042.00	2.8		
7043.00	1.9		

Source: 1970 Census of Population and Housing, Census Tracts, Washington, D.C. SMSA, (PHC(1)-226) Table 4.

Data in Table 8 show the percent of persons in each Census Tract area who had an income below the poverty level in 1970 as defined by the Federal government. It can be seen that in the area mentioned above having the largest percent of older persons with the lowest median education level, 10 percent had incomes below the poverty level. This was true of 4.2 percent of persons in the area where people had the highest median level of education. In general, what these data show is that a relatively low proportion of the "down county" population had incomes below the poverty level.

Forecasts of School Enrollments

A characteristic of the population of concern to educational planners is the trend in numbers of school children in grades kindergarten through grade 12. In Montgomery County this is particularly of interest because each year since 1962 the birth rate per one thousand residents has not only been less than for the nation but has also declined in parallel to the national trend. The birth rate per one thousand residents in Montgomery County declined from 21.6 in 1962 to 12.3 in 1972, a decline of approximately 43 percent.[4] This decline is a major factor causing decreases in elementary school enrollments. These decreases will subsequently be reflected in the size of high school enrollments and in turn in the numbers of high school graduates.

Effects of sewer moratoriums in Montgomery County are influencing some of the decline in elementary school enrollments by curtailing immigration of residents. Until such time as immigration is sufficient to neutralize the decline in birth rate, or to provide enough children to increase enrollments regardless of low birth rate, enrollments will continue to decline. Total county-wide public school enrollments are expected to drop between Fall 1973 and Fall 1979, even if sewer moratoriums are lifted by 1977.

An examination of enrollments in grades 9-12 in the "down county" area public schools for Fall 1969-1973, inclusive, compared to enrollments in public schools elsewhere in Montgomery County, revealed that an increasing percentage of enrollments in those grades has been in schools located out of the "down county" area. Conversely, smaller percentages of enrollments have been in "down county" schools. Percentages of public high school enrollments in the "down county" area for 1969, 1970, 1971, and 1972 were 64.7, 63.4, 60.1, and 56.7, respectively.[5]

Methods used to project public school enrollments were examined and found to be as valid as any in use anywhere. They take into account every kind of variable (including influence of such factors as sewer moratorium schedules) affecting enrollments, except some kinds of major national catastrophy such as economic depression, military conflict, etc. Presented in Table 9 are data showing past and projected trends in public school enrollments. Viewing the data, one can see that there

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[4] Source: Montgomery County Public Schools, "Enrollment on September 30, By Grade, School, and Area" for 1969, 1970, 1971, and 1972.

[5] Maryland Department of Health and Mental Hygiene, September 1973.

TABLE 9

MONTGOMERY COUNTY PUBLIC SCHOOL ENROLLMENTS

Year (Fall)	Percent Change Kindergarten-Grade 6	Total Enrollments Grades 9-12
1969		36,854
1970	-1.59	37,782
1971	- .86	38,802
1972	-1.18	39,202
1973	-2.49	39,731
1974	-1.51	39,965
1975	-1.63	40,395
1976	-3.20	40,470
1977	-2.30	40,375
1978	-1.73	40,305
1979	- .50	38,810

SOURCE: Division of Planning, Department of School Facilities, Montgomery County Public Schools, October 12, 1973.

has been an annual decline in enrollments in grades kindergarten through grade six from 1969 to 1973. There is a projected decline to 1979. The numbers of students in grades 9-12 are expected to hold relatively stable, with the 1979 enrollment expected to approximate the 1971 enrollment.

Prospects for Montgomery College Enrollments

Several methods have been used to determine potential public community college enrollments, or to render judgments about the extent to which a community college is providing a level of service it "ought" to be. One method is to forecast on the basis of a ratio per thousand of total population, assuming a certain proportion would enroll in community college programs. Another method assumes that the full-time equivalent enrollment potential of a public community college would be a ratio to numbers of all youth age 17-18 or age 18-24 in the District. Another method is to forecast the size of freshman class each year based on proportions of projected 12th grade students who might be expected to enroll, assume a dropout rate between freshman and sophomore year to get a potential sophomore class size, then add an assumed percent increase for older age persons who would enroll part or full time.

Research and experience have demonstrated that the method which has most closely approximated enrollments as they actually develop is based upon a ratio of potential community college enrollments to the size of enrollments in grades 9-12 of high schools in the service area. This method does not assume that a certain proportion of students in grades 9-12 only will enroll. It does assume a relationship of full-time-equivalent community college enrollment potential for students of all ages, young or old, to the size of grades 9-12. If drastic changes are not expected in age composition of the population during a given time period, one of the most stable and reliable methods is to project enrollments on the basis of the total population base. Any long-range projection used for planning purposes should be periodically repeated over time to take into account changed conditions and to allow more refinements resulting in greater accuracy. Considerable accuracy can be achieved in short-term projections, but long-range forecasting with relatively good validity is altogether a different matter.

It is typical that mature comprehensive public community colleges, with effective community college relationships and a guidance and counseling system articulated well with those in secondary schools, will have a full-time equivalent approximating 25-30 percent of the number of students enrolled in grades 9-12. This percentage range, it must again be emphasized, is a relationship which includes academic credit enrollments by youth graduating from high school and adults of all ages. During the fall terms in 1969-1973, inclusive, the full-time equivalent enrollment (FTE) at Montgomery College was 14.3, 16.2, 17.5, 19.1, and 20.1 percent, respectively, of enrollments in grades 9-12 of public schools in Montgomery County. If, in 1975 and 1979, enrollments approximated this level of service, Montgomery College enrollments would be between 10,000 FTE in 1975 and 9,700-11,650 FTE in 1979. The most likely FTE enrollment potentials are 11,000 in 1975 and 10,700 in 1979. If FTE enrollments are equated from a head count at 60 percent, these enrollment levels would represent, respectively, 30 and 26 persons per 1,000 total population forecast for the county.[6] These enrollment prospects to 1979 are in line with expectations that the College could be serving around 18,000 different individuals by 1979, based upon the numbers of children now in school and total population forecasts.

Summary

1. A number of factors contributes to a declining birth rate in Montgomery County, which at an all time low level is less than for the nation. Immigration is being slowed by construction slow-downs due to sewer moritoriums.

2. Since 1950, Montgomery County population has been increasing as a proportion of total population in the Washington Standard Metropolitan Statistical Area. Population is expected to stabilize when it increases from about 19 percent at present to 20-25 percent of total population in this area.

3. Age composition shifts in the county during the 1970's are expected to result in a decline in percent of persons age 14 and under, and increases in percentages of persons age 25-44 and 65 or over. The age composition varies considerably among the "down-county" area Census Tracts.

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[6] Maryland-National Capital Park and Planning Commission, Population and Household Growth Forecast, 1972-1982, October 1972, p. 10.

4. By ethnic background, the population of Montgomery County was 94.5 percent white, 4.1 percent Negro, and 1.4 percent "other." Chinese, Japanese, Filipino, and Indian constituted most of the persons in the "other" category. Negro residents lived in every Census Tract in the "down county" area, and Spanish-speaking residents lived in all but three Tracts. There are large concentrations of Negro and Spanish residents in the adjacent District of Columbia area.

5. Total population has been forecast to increase from 522,809 in 1970 to 696,500 in 1980 and 747,000 in 1983. A percentage increase of 57 percent is expected in numbers of women age 20-29 during the 1970's. During this period, persons born during the high fertility years of 1955-1961 will reach peak child-bearing age. These factors would seem to portend a reversal of the declining birth rate toward the end of this decade.

6. Total population in Montgomery County is expected to increase between 1973 and 1983 by about 29 percent, but in the "down county" area the increase anticipated is 12.7 percent. The proportion of total county population in the "down county" area has been declining, a trend expected to continue.

7. Major population growth in the "down county" area will be in the southwest portion. If all the vacant land in the "down county" area now zoned for residential development were fully developed, there would be an estimated potential for approximately 1,800 additional community college students in that area.

8. The median education level of county residents was relatively high, and a relatively low proportion had incomes below the poverty level.

9. In both Montgomery County and in the "down county" area, 20.5 percent of all persons over age 25 had not graduated from high school. There were 58,050 persons in the county who had not graduated from high school, and 32,589 (or 56.1 percent) were in the "down county" area.

10. Public elementary school enrollments are expected to decline each year throughout the 1970's while high school enrollments will remain fairly stable. In 1979, the 9-12 grade enrollment is expected to approximate the 1971 level.

11. Public high school enrollments in the "down county" area have comprised a decreasing percentage of total county public school enrollments since 1969.

12. The proportion of persons enrolled for academic credit at Montgomery College has been increasing each year, but the level of service is slightly below the potential enrollment level that could be expected.

13. A Montgomery College enrollment in 1979 of approximately 11,000 full-time equivalent students, with an 18,000 head count, is both a reasonable and possible expectation.

CHAPTER III

STRUCTURE OF THE ECONOMY AND FORECASTS OF EMPLOYMENT AND MANPOWER REQUIREMENTS

Part I - Employment

Introduction

The purpose of this part of the study was to focus upon trends in the Montgomery County economy which have implications for manpower requirements and consequently the need for educational programs.

Proximity of Montgomery County to the Nation's capital is reflected in data on how residents earn a living. Employment growth in the county has been related directly to change in demand for the chief exports of the area which have been largely provided by the Federal Government, namely, information, money, and decisions. Policy adopted at the Federal level is a major factor influencing the continued expansion of the employment base. National fiscal and monetary policy decisions which alter the flow of income and investment affect acutely the rate of employment growth in this area.

Trends in Industrial Mix

Data shown in Table 10 on employment by Standard Industrial Classification reveal that the largest percentage (35.9 percent) of employed residents were engaged in service industries. The second largest employment sector was the government sector (20.7 percent). Compared to the 1960 employment distribution, the percentages of all employed residents engaged in agriculture, forestry-fisheries, construction, manufacturing, transportation-communications-public utilities, and government sectors decreased in 1970. While the proportion of employment decreased in manufacturing, there was a major relative increase in the manufacturing of non-electrical machinery. The largest proportional increase of employment in the trade sector was in wholesale trade and general merchandise retailing. Larger proportions of all employees in 1970 than in 1960 were in banking, credit agencies, insurance, real estate and other financial-related work. The largest shift in the service occupations was in percentage of persons employed in providing legal, engineering, and miscellaneous professional services, and the next largest shift was in percent of persons providing business and repair services.

Not shown in Table 10 are the percentages of change during the decade in numbers of persons employed in a given industrial classification. Total employment increased by approximately 69.6 percent. The percentage of Montgomery County residents employed in construction increased by 34.0 percent, and in manufacturing there was an increase of 48.5 percent. Within the manufacturing sector, the increase in number of employees in non-electrical machinery manufacturing was 312 percent, while in the manufacture of electrical machinery, equipment and supplies the employee increase was 59 percent.

The numerical increase of employment in transportation, communications, and public utilities was 69.3 percent. In the trade sector, the percent increase was approximately 90 percent, while an increase of 104 percent

TABLE 10

EMPLOYMENT OF MONTGOMERY COUNTY RESIDENTS BY INDUSTRIAL CLASSIFICATION, 1960 and 1970

Industrial Classification	Number Empl. 1960	Percent Total Empl.	Number Empl. 1970	Percent Total Empl.
Agriculture, Forestry, and Fisheries	2,461	1.94	2,239	1.04
Mining	78	0.06	195	0.09
Construction	8,037	6.32	10,742	4.98
Manufacturing	10,636	8.37	15,790	7.33
Furniture, lumber, and wood products	379	0.30	285	0.13
Metal industries	813	0.64	659	0.31
Machinery (except electrical)	556	0.44	2,289	1.06
Electrical machinery, equipment and supplies	1,499	1.18	2,387	1.11
Transportation equipment	336	0.26	626	0.29
Other durable goods	912	0.72	1,694	0.79
Food and kindred products	1,055	0.83	603	0.28
Textiles and fabricated textile products	91	0.07	274	0.13
Printing, publishing, and allied industries	4,356	3.43	5,444	2.53
Chemicals and allied products	354	0.28	524	0.24
Other nondurable goods	192	0.15	1,005	0.47
T.C.P.U.[1]	5,499	4.33	9,309	4.32
Railroads and railway express service	620	0.49	301	0.14
Trucking service and warehousing	309	0.24	880	0.41
Other transportation	1,450	1.14	2,002	0.93
Communications	1,898	1.49	4,260	1.98
Utilities and sanitary services	1,222	0.96	1,866	0.87
Trade	21,425	16.86	40,686	18.88
Wholesale trade	3,885	3.06	7,289	3.38
Food, bakery, and dairy stores	2,729	2.15	4,594	2.13
Eating and drinking places	1,866	1.47	4,857	2.25
General merchandise retailing	3,261	2.57	6,393	2.97
Motor vehicle retailing and service stations	2,799	2.20	4,162	1.93
Other retail trade	6,885	5.42	13,391	6.21

TABLE 10 (Continued)

EMPLOYMENT OF MONTGOMERY COUNTY RESIDENTS BY INDUSTRIAL CLASSIFICATION, 1960 and 1970

Industrial Classification	Number Empl. 1960	Percent Total Empl.	Number Empl. 1970	Percent Total Empl.
F.I.R.E.[2]	7,179	5.65	14,638	6.79
Banking & credit agencies	2,157	1.70	4,543	2.11
Insurance, real estate & other finance	5,022	3,95	10,095	4.68
Services	37,195	29.26	77,290	35.87
Bus. & repair services	4,534	3.57	12,653	5.87
Private households	3,642	2.87	2,346	1.09
Other personal services	2,498	1.97	5,080	2.36
Entertainment & recreation services	1,082	0.85	2,081	0.97
Hospitals	3,076	2.42	5,852	2.72
Health services, exc. hospitals[3]	6,146	4.84	9,755	4.53
Elementary, secondary schools, colleges-public	5,177	4.07	12,398	5.75
Elementary, secondary schools, college-private	3,312	2.61	5,098	2.37
Other education and kindred services	N.A.	N.A.	2,123	0.99
Welfare, religious & non-profit member. organ.	3,335	2.62	5,930	2.75
Legal, engineering, & misc. prof. services	4,393	3.46	13,974	6.48
Government:				
Public administration (postal, fed., state, local)	29,145	22.93	44,605	20.70
Industry not reported	5,445	4.28	--	--
Total Employed[4]	127,100	100.00	215,494	100.00

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[1] Transportation, Communications, and Public Utilities

[2] Finance, Insurance, and Real Estate

[3] Includes medical practioners

[4] Includes all employed persons 14 years old and over for 1960 and 16 years and over for 1970.

Source: U.S. Census Bureau, General Social and Economic Characteristics,- Maryland 1960, PC(1) 22D, Md.

occurred in the finance, insurance and real estate sector. The largest percentage increase was 108 percent in the services sector of employment. Within the services sector, largest percentages of numerical increase were 218 percent in legal, engineering, and miscellaneous professional services, 171 percent in business and repair services, 106 percent in educational services, 78 percent in welfare, religious, and non-profit membership organizations, and 69 percent in health services including hospitals. The only decrease in numbers employed in the services sector was in numbers of private household workers. While the proportion of all persons employed in government declined, there was a numerical increase during the decade of 53 percent.

Thus, over one-half of all employed residents (56 percent) were in government work or in service industries. The largest percentages of absolute growth in numbers of employees were in the service and finance, insurance, and real estate sectors of the economy.

Data presented above are for all Montgomery County employees, regardless of where they were employed in the greater Washington metropolitan area. It is helpful in understanding the economy of Montgomery County to also examine data about what people do who work at a place in the county. Such employment is known as "at-place employment." These data appear in Table 11. Observing the data one can see, for example, that during the 1950's the numbers of persons employed in Montgomery County in agriculture services, forestry, fisheries, and mining declined by 78 percent, but during the 1960's the number increased 26 percent. Between 1970 and 1972, there was a 47.1 percent increase. However, the proportion of the total number of persons working in this sector within the county decreased from 1 percent in 1960 to 0.8 percent in 1972. Relatively, employment in this sector of the economy is declining. Data for other major industrial classifications are to be interpreted likewise.

Between 1960 and 1972, the proportion of all persons employed in Montgomery County in government has declined from 31.9 percent to 28.9 percent as the percent in private industry employment increased from 68.1 percent to 71.1 percent. Largest proportional increases of employment have been in services, finance, insurance, and real estate, and in wholesale and retail trade. Between 1970 and 1972, largest increases in numbers of employed persons by order of increase have been agriculture services, forestry, fisheries, and mining, finance, insurance and real estate; wholesale trade; and construction. During the 1960's the largest percentage increases in numbers of employees were in finance, insurance, and real estate; wholesale trade; retail trade; and in transportation, communications, and public utilities.

Trends in Occupational Structure

Shifts in industrial structure of the economy are accompanied by shifts in occupational structure. Data presented in Table 12 show the number and percent of all employed Montgomery County residents by occupational classification for 1960 and 1970. The largest shift in the

TABLE 11

TRENDS IN AT-PLACE EMPLOYMENT IN MONTGOMERY COUNTY

Industrial Classification	Percent Change in Number Employed				Percent in Each Industry	
	1950-1960	1960-1970	1970-1972	--	1960	1972
Agriculture Services, Forestry, Fisheries and Mining	-78.0	26.0	47.1	--	1.0	.8
Construction	106.0	59.0	24.9	--	9.5	8.0
Manufacturing	149.0	82.0	10.3	--	5.8	4.9
Transportation, Communications & Pub. Utilities	112.0	131.0	-2.4	--	1.7	1.6
Wholesale Trade	427.0	203.0	32.1	--	1.8	3.1
Retail Trade	129.0	125.6	10.7	--	16.9	18.0
Finance, Insurance, and Real Estate	203.0	205.7	32.2	--	4.6	7.8
Services	294.0	113.5	8.1	--	15.0	20.0
Other	78.0	30.1	3.0	--	11.9	6.8
Total Private	114.0	116.0	13.3	--	68.1	71.1
Government (Public)						
Federal	73.0	86.2	12.0	--	22.1	19.6
Civilian	70.0	84.0	12.4	--	20.8	18.4
Military	120.0	122.9	5.6	--	1.3	1.3
State and Local	102.0	116.7	1.6	--	9.8	9.2
Total Public	81.0	95.6	8.4	--	31.9	28.9
Total Public & Private	102.0	109.7	11.9	--	100.0	100.0

Source: Montgomery County Planning Board and Maryland-National Capital Park and Planning Commission, Population and Household Growth Forecast, October 1973, P. 49 and Office Research, Information and Management Analysis, Maryland-National Capital Park and Planning Commission, Regional Data Book (unpublished materials).

TABLE 12

NUMBER AND PERCENT OF EMPLOYED MONTGOMERY COUNTY RESIDENTS BY OCCUPATIONAL CLASSIFICATION, 1960 AND 1970

Occupational Classification	Number Empl. 1960	Percent Total Empl.	Number Empl. 1970	Percent Total Empl.
Professional, technical & kindred	34,729	27.32	70,625	32.77
Engineers	5,265	4.14	9,494	4.41
Physicians, dentists & related practicioners	2,039	1.60	3,631	1.68
Health workers, exc. pract.	2,378	1.87	4,498	2.09
Teachers, elem. & sec. schools	3,171	2.49	7,837	3.64
Technicians, exc. health	1,087	0.86	4,220	1.96
Other professional workers	20,789	16.36	40,945	19.00
Managers & administrators, exc. farm	17,946	14.12	30,627	14.21
Salaried: Manufacturing	1,128	0.89	1,911	0.89
Retail trade	2,155	1.70	4,721	2.19
Other industries	10,972	8.63	21,676	10.06
Self-Empl.: Retail trade	1,530	1.20	996	0.46
Other industries	2,161	1.70	1,323	0.61
Sales workers	11,426	8.99	18,945	8.79
Retail trade	5,777	4.55	9,726	4.51
Other than retail trade	5,649	4.44	9,219	4.28
Clerical workers & kindred	24,804	19.52	47,811	22.19
Craftsmen, foremen, & kindred wrker.	12,882	10.13	17,445	8.10
Auto mechanics, incl. body repairmen	958	0.75	1,555	0.72
Mechanics & repairmen, exc. auto	1,856	1.46	2,131	0.99
Metal craftsmen, exc. mechanics	546	0.43	894	0.41
Construction craftsmen	3,968	3.12	4,644	2.16
Other craftsmen	5,554	4.37	8,221	3.81
Operatives, excl. transport	3,485	2.74	5,340	2.48
Durable goods manufact.	957	0.75	835	0.39
Nondurable goods manufact.	788	0.62	596	0.28
Non-manufact. industries	1,740	1.37	3,909	1.81
Transport equip. operatives	2,604	2.05	3,305	1.53
Laborers, excl. farm	2,391	1.88	3,818	1.77
Construction laborers	718	0.56	740	0.34
Freight, stock, & materials hand.	332	0.26	1,384	0.64
Other laborers, excl. farm	1,341	1.06	1,694	0.79
Farmers & farm managers	669	0.53	483	0.22

TABLE 12 (Continued)

NUMBER AND PERCENT OF EMPLOYED MONTGOMERY COUNTY RESIDENTS
BY OCCUPATIONAL CLASSIFICATION, 1960 AND 1970

Occupational Classification	Number Empl. 1960	Percent Total Empl.	Number Empl. 1970	Percent Total Empl.
Farm laborers & farm foremen	968	0.76	606	0.28
Service workers, excl. private households	5,660	4.45	14,157	6.57
Cleaning service workers	867	0.68	1,892	0.88
Food service workers	1,557	1.23	4,765	2.21
Health service workers	458	0.37	1,335	0.62
Personal service workers	1,117	0.88	2,704	1.25
Protective service workers	1,661	1.31	2,359	1.09
Private household workers	3,274	2.58	2,332	1.08
Occupation not reported	6,262	4.93	--	--
Total Employed	127,100	100.00	215,494	100.00

Source: U.S. Census Bureau, General Population Characteristics, Maryland, 1960 PC(1 22B Maryland., also, General Social and Economic Characteristics, Maryland, 1970, PC(1) C22, Maryland.

occupational structure was the proportional increase in professional, technical and kindred occupations, clerical and kindred workers; and in service occupations, except private households. The largest proportional decline was in craftsmen, foremen, and kindred workers. There were also proportional declines in persons employed as operatives, laborers, farm workers, and private household workers.

Percentages of growth in numbers of employed persons by occupational category were 103.4 percent for professional, technical, and kindred; 150.1 percent for service workers, excluding private household workers; 92.8 percent for clerical and kindred; 70.7 for non-farm managers and administrators; 65.8 percent for sales workers; 59.7 percent for non-farm laborers; 41.7 percent for operatives; and 35.4 percent for craftsmen, foremen, and kindred workers. Numbers of farm workers declined by 33 percent and private household workers declined by 28.8 percent. Within the service classification where the percentage of numerical growth was greatest, food service employees increased by 206 percent, health service employees increased by 192 percent, personal service workers increased 142 percent, and cleaning services workers increased 118 percent. Among craftsmen, foremen, and kindred workers, the largest percentage of numerical increase was 62.3 percent for auto mechanics, including body repairmen. In the professional, technical, and kindred classification the percent increase of 288 percent for technicians, excluding health workers, was the largest. Health practitioners increased by 78.1 percent, and other health workers increased by 89.2 percent. Among non-farm laborers the percent increase of 316.8 percent in numbers of freight, stock, and materials handlers was the greatest. The large increase in these occupations coincides with the large relative growth in wholesale trade.

Factors Affecting Employment Growth and Labor Force Characteristics

In 1970, 50.5 percent of the employed Montgomery County residents worked in the county. Others worked elsewhere, primarily in the District of Columbia. Of all persons employed at a place in Montgomery County, 51,000 (28.2 percent) commuted from other places, primarily Prince Georges County. These commuting patterns are affected by the price of available housing relative to income levels of workers and the ease and cost of commuting. Alterations in the price and availability of housing would undoubtedly change these commuting patterns. A changed pattern of commuting has implications for future, and a shift in the industrial and occupational structure of the county's economic base. As larger percentages of persons who work in the county also live there, there will be, for example, increased demands for services of all kinds and retail trade establishments.

That these patterns are changing can be determined by examining the percent which the numbers of persons working in the county is of the total resident population. In 1960, the total number of persons employed in Montgomery County was 25 percent of the total population count. By 1970, this percent had increased to 34.6 percent of total population.

These data indicate that the trend is for an increasing percentage of persons who live in the county to work there also. Commuting outside the county to work in 1960 was greater than in 1970.[5]

The percentage of women in the work force is increasing. In 1960, 31.9 percent of all workers were women, but in 1970, women constituted 37.4 percent of all workers. In 1960, the percent was 33.5 of families with both husbands and wives working, but in 1970, the percent was 41.3. The percent increase in numbers of families with both parents working was 23.3 percent.[6] Increased participation of women in the county labor force should reinforce the trend for population growth to be closely related to employment in the metropolitan area, since a given rise in employment will support fewer households.

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[5] Maryland-National Capital Park and Planning Commission, Unpublished memorandum, February 12, 1973.

[6] United States Department of Commerce, Bureau of the Census, General Social and Economic Characteristics: Maryland (Washington, D.C.: Government Printing Office, 1972).

Another index of change is the percent of all residents age 16 and over who are employed. In 1960, 64.1 percent of persons age 16 and over were employed, but in 1970, after a decline throughout the decade, 63.7 percent were employed. This percentage is expected to decline further as the proportion of older persons in the population increases and increasing affluence keeps students out of the labor force for longer periods.

As mentioned at the beginning of this section, a major factor influencing the continued expansion of the county's employment base is federal policy. For example, cutbacks in federal payrolls, in national defense, and in other expenditures affecting contractual industries affected adversely the growth of employment in Montgomery County during the late 1960's and early 1970's. A tightened federal monetary policy in 1970 curtailed job increases in the finance, insurance, and real estate sectors of the economy. Due to a determination in the 1960's by the Federal Government to make pay scales competitive with private industry, basic federal salaries were reported increased by 87.1 percent.[7] The number of families throughout the greater Washington area with incomes over $15,000 (in 1969 constant dollars) increased 152 percent. The increase in number of high-income families generated increased demands for local services. Although federal payrolls are expected to keep pace with increases in the private sector, more major catch-up boosts are not likely, and federal employment has stabilized at a level slightly below the July 1968 level.[8]

As rapid growth and expansion in the Federal employment sector have tapered off in the provision of export items--namely, money, information, and decisions--new growth of these export producing commodities has come from other organizations of national and international scope that moved into the greater Washington area. Many labor, trade, professional, educational, artistic and financial organizations have headquarters in the Washington area. In recent years Washington's share of such organizations increased while the share in several other major large cities declined. The expansion of these service organizations created a demand for construction and a spectrum of service and support activities. The rapid recent movement of these organizations to the Washington area is expecced to soon taper off.[9]

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[7] Washington Center for Metropolitan Studies, Metropolitan Bulletin, XI (June-July, 1973), p.2; Montgomery County Planning Board, Maryland - National Capitol Park and Planning Commission, Population and Household Growth Forecast, 1973-1983 P. 23; and A. E. Shidler, Washington Center for Metropolitan Studies, Conference on Growth as a Metropolitan Issue sponsored by the Metropolitan Washington Council of Governments, September 22, 1973.

[8] Ibid.

[9] Ibid.

Employment Forecasts

The number of persons working in Montgomery County increased by 109.7 percent between 1960 and 1970. By January 1972 estimated "at-place" employment was 203,277, or an increase of 11.8 percent since 1970. Projections of growth trends in Montgomery County indicate that in 1980, the total number of persons in non-farm jobs within the county will approximate 270,990.[10] Employment of persons in the county is expected to increase by approximately 87,000 or 45 percent between 1973 and 1983.[11] Earlier most probable at-place employment projections indicated there would be 244,500 persons in non-agriculture related jobs in 1980.[12]

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[10] Maryland-National Capital Park and Planning Commission, Unpublished Memorandum, February 12, 1973, p.2.

[11] Montgomery County Planning Board and Maryland-National Capital Park and Planning Commission, Population and Household Growth Forecast, 1973-1983, p.23.

[12] Hammer, Greene, Siler Associates, The Economy of Metropolitan Washington. (Washington, D.C.: The Associates, 1969). Appendix Table A-10.

Part II - Manpower Requirement Forecasts in the Washington Area

Introduction

In August 1971, manpower requirements were forecast for the Washington Standard Metropolitan Statistical Area (WSMSA) as a guide for planning education and training programs at the post-secondary school level.[13] Montgomery County is part of the WSMSA as are some portions of northern Virginia and the District of Columbia. Results of this study are presented below following a brief outline of how the data base and the industry and occupation forecasts were developed and how the model was constructed and used.

Outline of Methodology

1. Developing Base Data

First, a good set of base data for 1967 had to be developed. Bureau of Labor Statistics' occupational information by industry data were adjusted in two ways. First the wage and salary employment figures supplied by the Bureau were adjusted to obtain total employment levels, including self-employed and unpaid family workers. Second, government employees were distributed to appropriate industries, so that employment counted as "government" would be restricted to that connected with public administration, and employment counted in each industry sector would reflect all employment in occupations relating to that sector. The most significant redistribution of this nature occurred in educational services, medical and other health services, and for printing and publishing, in which a very large proportion of the jobs are accounted for by the government. Adjustments are not held for multiple job holders.

2. Industry Forecasts

The study covered 55 industrial sectors, of which 16 were treated in depth as major sectors. The choice of major sectors was made on the basis of: (1) present share of employment in the WSMSA (the sectors chosen together account for about 75 percent of total employment), and (2) potential growth for the WSMSA. Initially, ten major sectors were defined, but further review of these sectors revealed that some of them would have to be broken down and treated in further detail.

Once the industry sectors were selected, use was made of employment lists available from the D.C. Manpower Administration and a cross-section of employers was chosen to interview within each industry sector--employers representative of the area and of different types of company or institution. In order to tailor national forecasts to WSMSA characteristics, interviews sought to find out the employers' views of trends in employment growth and occupational distribution in the Washington area, and how these trends differ from national trends. Frequently, data were not as readily available as had been hoped, but it was possible to get a feeling for the trends and significant qualitative information.

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[13] Arthur D. Little, Inc., Manpower Requirements in the Washington Standard Metropolitan Statistical Area, Report to the District of Columbia Government, August, 1971.

To supplement these industry interviews, regression analyses were done for most of the industries, relating WSMSA employment to variables such as national employment in the same industry or to regional population for the last 10 or 15 years with projections to 1985. Finally, in reviewing the industry employment forecasts, the mix of subsectors within a given industry in the WSMSA was considered relative to the industry's mix in the nation as a whole. For instance, whether or not the printing industry in the WSMSA is like that of the nation depends on whether of not the WSMSA has the same mix of newspaper employees and commercial printing employees as the nation does. Some of the industries we interviewed (such as eating and drinking places) were fairly homogeneous in that they did not readily divide into discrete subsectors, while others (like printing and publishing) were more diverse. In making employment forecasts, this industry mix was taken into account and consideration was given to whether growth or occupational change in each industry was distributed throughout all its components or attributable to one particular component. Thus, forecasts were based on a combination of results from the industry interviews, regression forecasts, national forecasts, and a comparison of the subsector mix in each industry in the WSMSA with the national mix.

For the minor industrial sectors, growth rates of total national employment by industry, as forecasted by the Bureau of Labor Statistics were applied to the appropriate industry.

3. Occupational Forecasts

For forecasting the occupational mix within the major sectors, a variety of approaches was used. Use was made of the industry interviews and of occupational distributions by industry derived from data in the 1960 Census. As in the case of the industry forecasts, the subsector occupational mix in the WSMSA was considered versus the nation as a whole. That is, if Washington in 1960 had a higher share of a particular subsector than the nation did, due weight was given to the occupational mix of that particular subsector.

To estimate the occupational mix for the minor industries, it was assumed that national trends hold for the WSMSA. The distributions available from the latest revisions of Tomorrow's Manpower Needs (issued by the Bureau of Labor Statistics) were used.

Forecasts were obtained of occupational mix through 1985, using Bureau of Labor Statistics figures for 1967 and 1980 as a starting point. The occupational distributions for 1972 through 1976 were developed on a prorated basis, estimating the average annual change in the percents between 1967 and 1980 for each occupation. This average annual change was assumed to continue out beyond 1980 to 1985 in order to develop an occupational distribution for 1985. In instances where the continuation of the trend in the occupational distribution between 1967 and 1980 yielded a negative employment figure when projected to 1985, the employment level in that occupation for 1985 was assumed to be half the 1980 value. This methodology was adopted on the premise that, as the number of employees in an occupation in any industry approaches zero, the rate of decline in its proportion of total employment slows down.

4. The Forecasting Model

The basic data which fed to the model were:

(1) Industry employment estimates for 1967, 1972, 1973, 1974, 1975, 1976, 1980 and 1985, computed as described above; and

(2) An occupational distribution by industry for 1967 and 1980.

Once the occupational distribution was obtained for a given year and a given industry, it was applied to the estimate of total employment in that industry for that year in order to derive occupational estimates for that industry in that year. Each set of occupational estimates was summed over industries. The final result was a matrix of employment for 55 industries and 160 occupations for the years 1967, 1972, 1973, 1974, 1975, 1976, 1980 and 1985.

To obtain estimates of the annual manpower requirement in each occupation, annual growth rates based on the occupational forecasts were added to estimates of annual replacement needs.

Annual growth was estimated by computing the difference between the occupation level in a given year and that in the previous year. Where (as in the case of the 1972, 1980, 1985 estimates) explicit estimates for the occupational level in the previous year were not available, estimates were derived by linear interpolation based on the years available. Thus, the growth in a given occupation for 1972 was obtained by using the 1967 and 1972 figures to estimate the 1971 level of employment in that occupation and then subtracting the result from the 1972 figure.

Annual replacement rates were estimated by adjusting the national rates of separation from the labor force due to death and retirement by occupation published in the Bureau of Labor Statistics Tomorrow's Manpower Needs (Volume I, Appendix A) for male migration from the WSMSA, using the Bureau of the Census' male mobility rates by major occupational category. Tomorrow's Manpower Needs female separation rates probably accurately reflect regional rates, because separation from the labor force due to marriage and the birth of children are both included. They were used, unadjusted.

In instances where both males and females were employed in an occupation, the adjusted male rate and the published female rate were weighted by the proportions of males and females employed in the occupation (obtained from the 1960 Census of the WSMSA) to arrive at a single replacement rate.

The method assumes that replacement ratios by age, sex, and occupation in 1960 will not change significantly through 1985. One problem of this methodology is that it does not give due consideration to the increasing labor force participation of women. However, a detailed methodology for estimating replacement needs with more accuracy would in fact be a large project in itself and would need to rely heavily on specially prepared estimates due to lack of available information.

Industry Employment Forecasts in the WSMSA

Results of the employment growth forecasts for all industries in the WSMSA are presented in Table 13.

The federal government administration is the largest single sector in the WSMSA. It is expected to remain the largest throughout the forecast period, although its growth rate is likely to be much lower (1.1 percent per year) than the average employment growth for the area (2.7 percent). This sector includes most, but not all, of the people working for the federal government. Many government employees have been treated in this study as though they were employed by industry sectors related to their work (such as education or health care). When all federal government employees are considered, the compound annual growth rate (CAGR) of the federal government is 1.2 percent during the forecast period.

The fastest-growing industrial sector in the WSMSA is expected to be miscellaneous business services. This category comprises mainly R&D firms and consulting companies under government contract. Employment in this industry is likely to grow to 133,000 employees by 1980, which will make it the second largest industry. The forecast growth rate of 7.8 percent per year is much lower than this industry's recent historical growth in the WSMSA because of the expected reduction in defense contracting. However, because the federal government is expected to contract more non-defense projects in the forecast period, the growth rate for miscellaneous business services is likely to remain high.

Medical and other health services constitute the second fastest-growing sector. A 5.9 percent per year growth in employment is considered likely from 1967 to 1980. This growth rate will make the industry the third largest in the WSMSA by 1980 with employment totaling about 130,000 people.

The fourth largest industry is likely to be construction, which will employ approximately 123,000 people in 1980. Because this industry is subject to sharp fluctuations, these employment forecasts should be considered trend-line estimates. The growth rate of the construction industry (3.5 percent per year between 1967 and 1980) is also above average.

Educational services will probably have an above average growth rate of about 3.2 percent per year between 1967 and 1980. The level of employment in this industry is expected to reach 116,000 by 1980, which will make it the fifth largest industry.

TABLE 13

WSMSA EMPLOYMENT: 1967 ACTUAL AND FORECASTS FOR 1972, 1975, 1980 AND 1985 BY INDUSTRY (In Thousands)

Industry Classification	1967	1972	1975	1980	1985	Annual Compound Growth Rate 1967-1980
Agric., Frstry, Fisheries	4.6	4.2	4.0	3.6	3.3	-1.9%
Mining	.9	.9	.8	.8	.8	-0.9%
Construction	78.5	93.2	103.4	122.8	143.7	3.5%
Manufacturing	63.8	68.8	71.9	78.7	86.5	1.6%
Lumber and Wood	1.6	1.6	1.6	1.6	1.5	0.0%
Furniture and Fixtures	.9	1.0	1.1	1.2	1.3	2.2%
Stone, Clay and Glass	3.0	3.3	3.4	3.7	4.1	1.6%
Primary Metal	.6	.6	.6	.6	.6	0.0%
Fabricated Metal	5.6	5.8	5.9	6.1	6.4	0.7%
Mach., except Elect.	2.5	2.7	2.8	3.1	3.3	1.7%
Electrical Machinery	7.8	8.3	8.7	9.2	9.8	1.3%
Trans. Equipment	3.0	3.0	3.0	3.1	3.1	0.3%
Prof. and Sci. Equip.	1.4	1.5	1.6	1.7	1.8	1.5%
Misc. Manufacturing	.6	.6	.6	.7	.7	1.2%
Foods and Kindred	7.7	7.7	7.6	7.6	7.6	-0.1%
Apparel and Access.	.2	.2	.2	.2	.3	0.0%
Paper and Allied	1.1	1.2	1.2	1.3	1.4	1.3%
Printing and Publish.	25.5	28.9	31.1	36.0	41.8	2.7%
Chemicals and Allied	1.5	1.6	1.7	1.8	1.9	1.4%
Petrol. Ref. and Coal	.5	.5	.4	.4	.4	-1.7%
Rubber and Misc. Plastic	.3	.3	.4	.4	.5	2.2%
Trans., Comm., Elec., Gs., San.	66.1	73.6	79.3	91.2	103.9	2.5%
Transportation	31.3	33.0	34.8	37.8	39.9	1.5%
Railroads	5.6	4.9	4.6	4.0	3.6	-2.5%
Local and Inturb.Pass.	8.0	8.4	9.2	10.3	10.9	2.0%
Trucking & Warehousing	10.2	10.9	11.3	12.1	12.9	1.3%
Water Transportation	.1	.1	.1	.1	.1	0.0%
Air Transportation	6.6	7.8	8.7	10.3	12.3	3.5%
Trans. Services	.8	.9	.9	1.0	1.0	1.7%
Comm. & Elec. Gas & San.	34.8	40.6	44.5	53.4	64.0	3.3%
Communications	19.9	24.0	26.8	33.3	41.3	4.0%
Elec. Gas & Sanitary	14.9	16.6	17.7	20.1	22.7	2.3%
Wholesale & Retail Trade	224.5	250.0	265.3	295.2	331.9	2.1%
Wholesale	38.2	42.2	44.8	49.4	55.1	2.0%
Retail	186.3	207.8	220.5	245.8	276.8	2.2%
Lumber & Bldg. & Farm	5.1	5.0	4.9	4.8	4.7	-0.5%
General Merchandise	35.8	39.9	42.6	47.5	53.7	2.2%
Food & Dairy	28.8	33.2	36.2	43.0	51.1	3.1%
Auto Dealers & Services	24.4	29.1	30.9	33.9	37.3	2.6%
Apparel & Access.	12.4	12.5	12.5	12.6	12.6	0.1%
Furniture & Fixtures	8.4	8.9	9.2	9.7	10.2	1.1%
Eating & Drinking	42.1	47.9	51.7	59.6	70.2	2.7%
Misc. Retail Stores	29.3	31.3	32.5	34.7	37.0	1.3%
Fin., Ins.& Real Estate	71.2	78.6	83.4	92.1	101.7	2.0%
Services	355.9	435.3	486.3	614.7	790.0	4.3%
Hotels	14.2	16.5	18.0	21.4	25.4	3.2%
Other Personal Serv.	23.1	25.1	26.4	28.8	31.3	1.7%
Misc. Bus. Services	49.9	76.0	90.5	133.0	195.4	7.8%
Auto Repair Services	7.2	8.4	9.2	10.7	12.5	3.1%
Other Repair Services	4.7	5.2	5.5	6.0	6.6	1.9%
Motion Pictures	2.2	2.2	2.2	2.2	2.2	0.0%
Misc. Entertainment	11.5	14.3	16.4	20.4	25.4	4.5%
Medical and Other Health	61.9	80.9	95.0	130.2	178.3	5.9%
Legal Services	11.7	14.0	15.6	18.8	22.5	3.7%
Educational Services	77.0	88.4	96.0	115.7	144.2	3.2%
N-P Membership Orgs.	36.3	41.3	43.8	50.8	58.9	2.6%
Priv. Household Serv.	25.1	25.7	26.1	26.8	27.5	0.5%
Other Services	31.1	37.3	41.6	49.9	59.8	3.7%
Gov't.Public Administration	267.8	283.9	294.0	312.6	332.5	1.2%
Fed Gov't. Adminis.	245.4	259.2	267.8	282.9	298.9	1.1%
State & Local Gov't. Admin.	22.4	24.7	26.2	29.7	33.6	2.2%
TOTAL	1133.3	1288.5	1388.4	1611.7	1,894.6	2.7%

These industries, with their relatively rapid growth rates and large number of employees, will have a marked impact on the occupations which are likely to be in highest demand over the forecast period. Certain other industries, including automotive dealers, auto repair services, and private household services, will also have an impact because, although the industries are relatively small and not growing very rapidly, certain occupations within them (motor vehicle mechanics, for example) account for such a large proportion of total industry employment that, in terms of demand, they rank with occupations in the larger industries.

Highest Demand Occupations Relevant to Higher Education

In this section annual occupational demands are discussed. The reader should be aware that these refer to new people needed in occupations; it does not refer to the total number of incumbents in the occupation. For purposes of planning education and training, the annual demand is more important than the number of incumbents. The occupations relevant to higher education for which there will be greatest annual demand in the WSMSA in 1975 and 1980 are listed in Table 14. The specific occupations listed account for about 24 percent of total occupational demand in the area. Table 15 contains forecast demand for all occupations in the WSMSA in 1975 and 1980.

The level of occupational requirements is largely determined by three factors. First, demand for an occupation will be high if the industries requiring that occupation are large employers in the WSMSA. Second, demand will be high if the industries requiring the occupation are of reasonable size but growing rapidly. Third, demand will be high if the replacement needs for the occupation are relatively large.

As Table 13 indicates, government is the major employer in the Washington area. For this reason, occupations important to government administration, such as secretaries and stenographers, lawyers and judges, accountants and auditors, personnel and labor relations workers, social welfare workers, and economists, are in high demand. For example, the annual requirement for new secretaries in the WSMSA will jump from 6,600 in 1975 to about 8,170 persons in 1980. Approximately 400 new stenographers will be needed in 1975 and 480 in 1980. Both these occupations are required by other important industries in the area: consulting companies and R&D firms as well as nonprofit membership organizations need numbers of stenographers and secretaries. The annual requirement for new social and welfare workers is expected to be 530 in 1975 and 680 in 1980. Moreover, approximately 1,520 new lawyers and judges will be needed in 1975 and 1,670 in 1980. The extremely high need for the latter occupational category is due to a high replacement rate: many lawyers come to the area only to carry out short-term assignments. Around 1,480 new accountants and auditors are likely to be needed in 1975 and 1,730 in 1980, because professionals with this type of training are needed by almost all industries.

TABLE 14

WSMSA: MANPOWER NEEDS IN 1975, 1980, AND 1985
FOR SELECTED (HIGHEST DEMAND-400 PERSONS OR MORE) OCCUPATIONS
RELEVANT TO HIGHER EDUCATION

Occupation	Number of Persons in 1975			Number of Persons in 198		
	Annual Replacement	Annual Growth	Total Demand	Annual Replacement	Annual Growth	Total Demand
Secretaries	4114	2489	6603	4925	3245	8170
Lawyers and Judges	1213	312	1525	1315	356	1671
Accountants and Auditors	926	556	1482	1076	654	1730
Nurses, Professional	729	716	1445	962	1013	1975
Workers and Teachers in Arts, Entertainment	727	567	1294	899	747	1646
Cooks, except Private Household	748	340	1088	863	439	1302
Office Machine Operators	586	395	981	714	510	1224
Motor Vehicle Mechanics	690	233	923	745	235	980
Technicians, Medical and Dental	335	576	911	520	820	1340
Practical Nurses	381	440	821	567	643	1210
Electrical Engineers	354	423	777	473	626	1099
Personnel and Labor Relations Workers	523	189	712	570	226	796
Elementary Teachers	772	-115	657	767	-23	744
Secondary Teachers	589	38	627	620	140	760
Draftsmen	310	277	587	372	344	716
Social and Welfare Workers	319	211	530	386	290	676
Physicians and Surgeons	220	266	486	288	374	662
Civil Engineers	292	174	466	339	199	538
Policemen, Detectives, etc.	413	20	433	421	35	456
College Teachers	297	107	404	338	180	518
Stenographers[1]	278	121	399	320	163	483
Designers, except Draftsmen[1]	139	189	328	197	270	467
Economists[1]	191	130	321	230	181	411
A. TOTAL Selected Highest Demand Occupations Relevant to Higher Education	15146	8654	23800	17907	11667	29574
"Other" Managers, Officials, Proprietors	5652	2497	8149	6345	3081	9426
"Other" Professional, Technical and Kindred	1494	2088	3582	2080	2722	4802
"Other" Technicians	721	1049	1770	983	1342	2325
"Other" Engineers	685	342	1027	770	415	1185
"Other" Medical and Health Workers	391	363	754	506	512	1018
"Other" Natural Scientists	353	241	594	403	268	671
"Other" Teachers	258	247	505	332	321	653
"Other" Social Scientists	310	96	406	331	103	434
B. TOTAL "Other" Occupations	9864	6923	16787	11750	8764	20514
C. TOTAL Occupations Listed	25010	15577	40587	29657	20431	50088
D. TOTAL Occupations Relevant to Higher Education	28883	17226	46109	33978	22604	56582
E. Total All Occupations	64854	34368	99222	75169	44374	119543
Percent-Selected Highest Demand Occupations; A as a Percent of E	23.4%	25.2%	24.0%	23.8%	26.3%	24.7%
Percent-"Other" Occupations; B as a Percent of E	15.2%	20.1%	16.9%	15.6%	19.8%	17.2%
Percent-Occupations Listed; C as a Percent of E	38.6%	45.3%	40.9%	39.5%	46.0%	41.9%
Percent-Occupations Relevant to Higher Education; D as a Percent of E	44.5%	50.1%	46.5%	45.2%	50.9%	47.3%

TABLE 14

WSMSA: MANPOWER NEEDS IN 1975, 1980, AND 1985 FOR SELECTED (HIGHEST DEMAND-400 PERSONS OR MORE) OCCUPATIONS RELEVANT TO HIGHER EDUCATION

Occupation	Number of Persons in 1985		
	Annual Replacement	Annual Growth	Total Demand
Secretaries	5989	4256	10245
Lawyers and Judges	1429	401	1830
Accountants and Auditors	1253	770	2023
Nurses, Professional	1269	1335	2604
Workers and Teachers in Arts, Entertainment	1125	982	2107
Cooks, except Private Household	1008	558	1566
Office Machine Operators	887	695	1582
Motor Vehicle Mechanics	804	253	1057
Technicians, Medical and Dental	795	1225	2020
Practical Nurses	855	992	1847
Electrical Engineers	634	849	1483
Personnel and Labor Relations Workers	627	268	895
Elementary Teachers	751	-67	684
Secondary Teachers	661	181	842
Draftsmen	443	396	839
Social and Welfare Workers	470	365	835
Physicians and Surgeons	375	482	857
Civil Engineers	392	227	619
Policemen, Detectives, etc.	438	71	509
College Teachers	397	256	653
Stenographers	375	212	587
Designers, except Draftsmen	280	383	663
Economists	282	241	523
A. TOTAL Selected Higher Demand Occupations Relevant to Higher Education	21539	15331	36870
"Other" Managers, Officials, Proprietors	7141	3537	10678
"Other" Professional, Technical and Kindred	2872	3684	6556
"Other" Technicians	1340	1828	3168
"Other" Engineers	874	508	1382
"Other" Medical and Health Workers	654	655	1309
"Other" Natural Scientists	460	309	769
"Other" Teachers	431	430	861
"Other" Social Scientists	355	112	467
B. TOTAL "Other" Occupations	14127	11063	25190
C. TOTAL Occupations Listed	35666	26394	62060
D. TOTAL Occupations Relevant to Higher Education	40564	29144	69708
E. TOTAL All Occupations	88424	56834	145258
Percent-Selected Demand Occupations; A as a percent of E	24.4%	27.0%	25.4%
Percent-"Other" Occupations; B as a percent of E	16.0%	19.5%	17.3%
Percent-Occupations Listed; C as a percent of E	40.3%	46.4%	42.7%
Percent-Occupations Relevant to Higher Education; D as a percent of E	45.9%	51.3%	48.0%

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[1] These occupations are included because of their 1980 demand; some occupations with a demand of more than 321 persons in 1975 may be excluded.

A number of electrical engineers (about 780 in 1975 and 1,100 in 1980) will be needed in communications; in electric, gas and sanitary services; and in miscellaneous business services. In the WSMSA, the majority of the firms classified under miscellaneous business services are consulting firms relying on government contracts. This rapidly growing industry will increase the annual demand for additional draftsmen (about 590 new draftsmen will be required in 1975, and 720 in 1980) and designers (about 330 will be required in 1975, and 470 in 1980), as well as lawyers, accountants, auditors, and economists.

Civil engineering requirements are forecast in relatively large numbers (annual requirements of about 470 employees in 1975 and 540 in 1980). A good proportion of these will be required by the construction industry, which is expected to grow at about 3.5 percent per year during construction of Bicentennial facilities, the convention center and the Metro system.

The large and growing health care industry will place a great demand on the area for qualified personnel. The need for professional nurses, alone, will rise from 1,440 new nurses in 1975 to 1,980 per year in 1980. Annual requirements for medical and dental technicians are expected to jump from 910 in 1975 to 1,340 in 1980. The need for additional practical nurses is estimated at 820 in 1975, and by 1980 1,210 additional practical nurses will be needed. Increasingly, these personnel will relieve physicians and surgeons of routine tasks. Physicians are also in great demand in the area: 490 new physicians will probably be needed in 1975, and 660 in 1980. Cooks are also needed in greater than average proportions by the health care industry. The approximate requirement is expected to be 1,090 additional cooks in 1975 and 1,300 in 1980.

Although the educational service sector is large and growing in the WSMSA, the proportion of elementary and secondary school teachers is declining over the forecast period due to shifts in the age distribution of the population (fewer children of school age). As a result, growth in annual demand for elementary and secondary school teachers is due to replacement needs. The demand for elementary school teachers is likely to be about 660 in 1975 and 740 in 1980. The requirements for additional secondary school teachers will be about 630 in 1975 and 760 in 1980. In the case of elementary teachers, total demand is lower than the annual replacement needs because the growth component is declining in the WSMSA. However, growth in the educational services industry will lead to increased demand for other occupations important to this industry: college teachers, art and music teachers (included with other workers in art and entertainment), and researchers. Annual demand for additional college teachers is expected to be about 400 in 1975 and 520 in 1980.

Occupations such as office machine operators, cooks, and policemen are required by most of the industries in the area. The annual demand for office machine operators is expected to be about 980 in 1975 and 1,220 in 1980. The yearly requirement for policemen is likely to run to 430 additional policemen in 1975 and 460 in 1980.

Demand is high for motor vehicle mechanics, partly because they account for such a high proportion of total employment in the automotive dealers and auto repair industries and partly because their replacement ratio is high. About 920 new motor vehicle mechanics will probably be required in the area in 1975 and 980 in 1980.

Highest Demand Occupations, Total

The occupations in the WSMSA which will be in highest demand in 1975 and 1980 regardless of the educational requirements can be determined from Table 15. Twenty-three occupations account for almost 43 percent of the total annual job openings in the Washington area in 1975 and 1980.

In the WSMSA, sales workers are needed primarily by the wholesale and retail trade sector and to a lesser extent by food stores, automotive dealers and service stations, and printing and publishing. Annual openings will be about 7,200 in 1975 and 8,300 in 1980.

Laborers are in high demand, primarily because of the high turnover in this occupation, which will be 2,525 in 1975 and 2,750 in 1980. There will be a total demand for 3,310 additional laborers in 1975 and 3,680 in 1980. Laborers are needed in many industries, but are required to a significant extent only in construction and in gas, electric and sanitary services.

A high number of replacements must be found for the following occupational categories: private household workers; janitors; guards, watchmen, and doorkeepers; drivers; and typists. With the exception of private household workers, who are found almost exclusively in the private household services industry, all industries require these personnel.

Hospital and institutional attendants are in such demand that annual requirements will rise from 1,910 additional personnel in 1975 to 2,780 in 1980.

Both foremen and carpenters are needed in large numbers in the WSMSA. This is due in part to high turnover. Also carpenters are needed in large numbers in the construction industry, and foremen are required in many key high growth industries. The annual demand for foremen is likely to be about 1,030 in 1975 and 1,230 in 1980. The yearly requirement for carpenters is expected to be 980 new carpenters in 1975 and 1,090 in 1980.

Cashiers, waiters, and waitresses are needed at eating and drinking establishments, although the need for additional cashiers will be greater for food and general merchandise stores. In 1975, approximately 1,440 more waiters or waitresses will be needed; and 1,710 in 1980. The area's requirement for cashiers is likely to be 1,420 in 1975 and about 1,770 in 1980.

TABLE 15

WSMSA: MANPOWER NEEDS IN 1975, 1980, AND 1985
FOR SELECTED (HIGHEST DEMAND-1,000 PERSONS OR MORE) OCCUPATIONS

Occupation	Number of Persons in 1975 Annual Replacement	Annual Growth	Total Demand	Number of Persons in 1980 Annual Replacement	Annual Growth	Total Demand
Sales Workers	4958	2246	7204	5647	2652	8299
Secretaries	4114	2489	6603	4925	3245	8170
Laborers, except Farm and Mine	2525	790	3315	2750	934	3684
Attendants, Hospitals and Other Institutions	868	1038	1906	1309	1470	2779
Drivers - Bus, Truck and Tractor	1127	474	1601	1245	527	1772
Private Household Workers	1371	197	1568	1431	205	1636
Lawyers and Judges	1213	312	1525	1315	356	1671
Accountants and Auditors	926	556	1482	1076	654	1730
Typists	1440	9	1449	1469	108	1577
Nurses, Professional	729	716	1445	962	1013	1975
Waiters and Waitresses	931	514	1445	1072	640	1712
Cashiers	726	699	1425	915	858	1773
Janitors and Sextons	1046	250	1296	1201	441	1642
Workers and Teachers in Arts, Entertainment	727	567	1294	899	747	1646
Cooks, except Private Household	748	340	1088	863	439	1302
Bookkeepers, Hand	706	358	1064	803	441	1244
Foremen, NEC	704	327	1031	812	417	1229
Carpenters[1]	722	262	984	804	288	1092
Office Machine Operators[1]	586	395	981	714	510	1224
Technicians, Medical and Dental[1]	335	576	911	520	820	1340
Guards, Watchmen, Doorkeepers[1]	616	226	842	761	377	1138
Nurses, Practical[1]	381	440	821	567	643	1210
Engineers, Electrical[1]	354	423	777	473	626	1099
A. TOTAL, Selected Highest Demand Occupations	27853	14204	42057	32533	18411	50944
"Other" Managers, Officials, Proprietors	5652	2497	8149	6345	3081	9426
"Other" Clerical and Kindred	4998	2957	7955	5763	4030	9793
"Other" Professional, Technical and Kindred	1494	2088	3582	2080	2722	4802
"Other" Service Workers	2165	1161	3326	2519	1475	3994
"Other" Operatives and Kindred	2135	795	2930	2400	1150	3550
"Other" Technicians	721	1049	1770	983	1342	2325
"Other" Mechanics and Repairmen	1124	621	1745	1330	765	2095
"Other" Engineers	685	342	1027	770	415	1185
"Other" Medical and Health Workers[1]	391	363	754	506	512	1018
B. TOTAL "Other" Occupations	19365	11873	31238	22696	15492	38188
C. TOTAL Occupations Listed	47218	26077	73295	55229	33903	89102
D. TOTAL All Occupations	64854	34368	99222	75169	44374	119543
Percent-Selected Highest Demand Occupations; A as a Percent of D	42.9%	41.3%	42.4%	43.3%	41.5%	42.6%
Percent-"Other" Occupations; B as a Percent of D	29.9%	34.5%	31.5%	30.2%	34.9%	31.9%
Percent-Listed Occupations; C as a Percent of D	72.8%	75.9%	73.9%	73.5%	76.4%	74.5%

TABLE 15 (Continued

WSMSA: MANPOWER NEEDS IN 1985
FOR SELECTED (HIGHEST DEMAND-1,000 PERSONS OR MORE) OCCUPATIONS[1]

	Number of Persons in 1985		
Occupation	Annual Replacement	Annual Growth	Total Demand
Sales Workers	6496	3264	9760
Secretaries	5989	4256	10245
Laborers, except Farm and Mine	3001	1050	4051
Attendants, Hospitals and Other Institutions	1957	2161	4118
Drivers - Bus, Truck and Tractor	1377	584	1961
Private Household Workers	1493	214	1707
Lawyers and Judges	1429	401	1830
Accountants and Auditors	1253	770	2023
Typists	1497	110	1607
Nurses, Professional	1269	1335	2604
Waiters and Waitresses	1256	836	2092
Cashiers	1153	1081	2234
Janitors and Sextons	1436	671	2107
Workers and Teachers in Arts, Entertainment	1125	982	2107
Cooks, except Private Household	1008	558	1566
Bookkeepers, Hand	919	530	1449
Foremen, NEC	950	528	1478
Carpenters	896	323	1219
Office Machine Operators	887	695	1582
Technicians, Medical and Dental	795	1225	2020
Guards, Watchmen, Doorkeepers	988	588	1576
Nurses, Practical	855	992	1847
Engineers, Electrical	634	849	1483
A. TOTAL, Selected Highest Demand Occupations	38663	24003	62666
"Other" Managers, Officials, Proprietors	7141	3537	10678
"Other" Clerical and Kindred	6800	5457	12257
"Other" Professional, Technical and Kindred	2872	3684	6556
"Other" Service Workers	2963	1852	4815
"Other" Operatives and Kindred	2752	1532	4284
"Other" Technicians	1340	1828	3168
"Other" Mechanics and Repairmen	1585	945	2530
"Other" Engineers	874	508	1382
"Other" Medical and Health Workers	654	655	1309
B. TOTAL "Other" Occupations	26981	19998	46979
C. TOTAL Occupations Listed	65644	44001	109645
D. TOTAL All Occupations	88424	56834	145258
Percent-Selected Highest Demand Occupations; A as a percent of D	43.7%	42.2%	43.1%
Percent-"Other" Occupations; B as a percent of D	30.5%	35.2%	32.3%
Percent-Listed Occupations: C as a percent of D	74.2%	77.4%	75.5%

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[1] These occupations are included because of their demand in 1980; some industries with a demand of more than 777 persons in 1975 may be excluded.

Annual Demand for all Occupations

The discussion above was about those occupations which have the largest estimated manpower demand in 1975 or 1980. This section discusses the demand forecast for all occupational categories in those years. Occupational classifications used are almost identical with those by the Bureau of Labor Statistics (BLS) on the updated tape which will form the basis for the next edition of *Tomorrow's Manpower Needs*. The exception is that the BLS category "Stenos, Typists, and Secretaries" has been disaggregated into its *three* components. Using 1960 Census data as a base, we estimated the changing relative proportions of stenos, typists, and secretaries. The increasing use of dictating machinery and computerized typewriters, and the tendency to upgrade occupational classifications, have resulted in decreases in the need for routine typing. The proportion of secretaries in the category stenographers, typists, and secretaries is expected to increase from 67 percent of the total to 77 percent, while the proportion of typists is likely to decline from 28 percent to 18 percent. The stenographers, already a very small proportion of the total, probably will continue to make up about 5 percent fo the total.

Table 16 shows the estimates, for 1975 and 1980, of the annual replacement, growth, and total demand for new workers in each occupation (e.g., Engineers, Aeronautical) each summary category of occupations (e.g., Engineers, Technical) and each major occupational group (e.g., Professional, Technical, Kindred). Sums of the individual entries do not always match because the figures have been rounded.

Comments On The Findings

During discussions with employers in the major industrial sectors of the WSMSA, many commented that simply preparing people in their occupations is not always enough to make them valued and desirable employees. Employers felt a need for employees who have not only mastered the elements of their occupation or profession, but who also show high motivation for doing their jobs. The education provided by the public institutions in the WSMSA will be more valued by employers to the extent that it accomplishes both these functions.

Employers also commented, both about their own industrial sectors and about other sectors, that growth would be much higher for businesses, companies, and plants located in the WSMSA *suburbs* than for those in the District of Columbia itself. This has an important implication. If the institutions of higher education in the WSMSA are to serve well the employers who will have jobs available for graduating students, the *curriculum planning and placement activities will have to include close contacts with suburban employers*. Employers also said that although a number of studies of WSMSA manpower requirements, present and future, have been published in recent years, little use seems to be made of them.

TABLE 16

MANPOWER DEMAND FOR ALL OCCUPATIONS IN THE WASHINGTON SMSA

Occupation	Numbers of Persons in 1975			Numbers of Persons in 1980		
	Annual Replacement	Annual Growth	Total Demand	Annual Replacement	Annual Growth	Total Demand
Total - Occupations Relevant to Higher Education +	28884	17227	46110	33978	22604	56582
Total - Occupations Not Relevant to Higher Education	35970	17142	53113	41187	21773	62961
Professional, Technical, Kindred	14552	10677	25229	17585	14126	31711
Engineers, Technical	1679	1224	2903	2002	1606	3608
Engineers, Aeronautical +	62	80	142	77	88	165
Engineers, Chemical +	17	5	22	18	5	23
Engineers, Civil +	292	174	466	339	199	538
Engineers, Electrical +	354	423	777	473	626	1099
Engineers, Industrial +	68	63	131	85	88	173
Engineers, Mechanical +	168	124	292	203	169	372
Engineers, Metallurgical +	9	4	13	10	4	14
Engineers, Mining +	9	2	11	9	2	11
Other Engineers, Technical +	685	342	1027	770	415	1185
Medical & Other Health Workers	2000	2077	4077	2646	2939	5586
Dentists +	77	67	144	95	93	188
Dieticians & Nutritionists +	26	23	49	33	34	67
Nurses, Professional +	729	716	1445	962	1013	1975
Optometrists +	13	9	22	16	13	29
Osteopaths +	15	11	26	20	15	35
Pharmacists +	147	9	156	152	15	167
Physicians & Surgeons +	220	266	486	288	374	662
Psychologists +	26	23	49	32	31	63
Technical, Medical, Dental +	335	576	911	520	821	1340
Veterinarians +	5	4	9	6	5	11
Other Medical & Health Workers +	391	363	754	506	512	1019

+ Designates occupational classifications for which post-secondary education is either desirable or essential.

TABLE 16 (Continued)

MANPOWER DEMAND FOR ALL OCCUPATIONS IN THE WASHINGTON SMSA

Occupation	Numbers of Persons in 1975 Annual Replacement	Numbers of Persons in 1975 Annual Growth	Numbers of Persons in 1975 Total Demand	Numbers of Persons in 1980 Annual Replacement	Numbers of Persons in 1980 Annual Growth	Numbers of Persons in 1980 Total Demand
Teachers	1919	279	2198	2061	619	2680
Teachers, Elementary +	772	-115	657	767	-23	744
Teachers, Secondary +	589	38	627	620	140	760
Teachers, College +	297	107	404	338	180	518
Teachers, Other +	258	247	505	332	321	653
Natural Scientists	909	597	1506	1039	707	1746
Chemists +	141	103	244	166	131	297
Agricultural Scientists +	43	-1	42	43	0	43
Biological Scientists +	145	87	232	165	105	270
Geologists & Geophysicists +	29	15	44	33	20	53
Mathematicians +	58	51	109	68	63	130
Physicists +	132	95	227	151	111	262
Other Natural Scientists +	353	241	594	403	268	671
Social Scientists	693	350	1043	787	439	1226
Economists +	191	130	321	230	181	411
Statisticians & Actuaries +	189	121	310	223	153	375
Other Social Scientists +	310	96	406	331	103	434
Technical, Except Medical & Dental	1156	1429	2585	1504	1806	3309
Draftsmen +	310	277	587	372	344	716
Surveyors +	63	60	123	77	70	147
Air Traffic Controllers +	28	22	50	33	23	56
Radio Operators +	27	17	44	32	23	54
Technicians, Other +	721	1049	1770	983	1342	2325
Other Professional, Technical & Kindred	6231	4556	10787	7545	5849	13394
Accountants & Auditors +	926	556	1482	1076	654	1730
Airplane Pilots & Navigators	74	106	180	97	122	219
Architects +	132	64	196	151	71	222

TABLE 16 (Continued)

MANPOWER DEMAND FOR ALL OCCUPATIONS IN THE WASHINGTON SMSA

Occupation	Numbers of Persons in 1975 Annual Replacement	Numbers of Persons in 1975 Annual Growth	Numbers of Persons in 1975 Total Demand	Numbers of Persons in 1980 Annual Replacement	Numbers of Persons in 1980 Annual Growth	Numbers of Persons in 1980 Total Demand
Clergymen +	154	3	157	162	28	190
Designers, Except Draftsmen +	139	189	328	197	270	468
Editors & Reporters +	169	134	303	212	177	389
Lawyers & Judges +	1213	312	1525	1315	356	1671
Librarians +	240	54	294	256	75	332
Personnel & Labor Relations +	523	189	712	570	225	796
Photographers +	89	57	146	106	79	185
Social & Welfare Workers +	319	211	530	386	290	675
Wrkers & Teachers in Arts, Entertainment +	727	567	1294	899	747	1646
Professional, Technical, Kindred, nec +	1494	2088	3582	2080	2722	4802
Managers, Officials, Proprietors	6002	2483	8485	6571	3087	9657
Conductors, Railroad	22	-1	21	22	-1	20
Officers, Pilots, Engineers - Ship +	4	3	7	5	4	8
Creditmen +	57	53	110	71	64	135
Purchasing Agents +	88	46	134	101	61	162
Postmasters & Assistants	57	-118	-61	18	-127	-109
Mgrs, Officials, Proprietors, nec +	5652	2497	8149	6345	3081	9427
Clerical & Kindred	14648	8334	22982	17007	10870	27877
Stenos, Typists, Secretaries	5832	2620	8452	6714	3517	10230
Stenographers +	278	121	399	320	163	483
Typists +	1440	9	1450	1469	108	1577
Secretaries +	4114	2489	6603	4925	3245	8171
Office Machine Operators +	586	395	981	714	510	1224
Other Clerical & Kindred Workers	8222	5316	13538	9570	6840	16410
Accounting Clerks	377	131	508	410	168	578
Bookkeepers, Hand	706	358	1064	803	441	1244
Bank Tellers	241	192	433	288	209	497

TABLE 16 (Continued)

MANPOWER DEMAND FOR ALL OCCUPATIONS IN THE WASHINGTON SMSA

Occupation	Numbers of Persons in 1975			Numbers of Persons in 1980		
	Annual Replacement	Annual Growth	Total Demand	Annual Replacement	Annual Growth	Total Demand
Cashiers	726	699	1425	915	858	1773
Mail Carriers	191	253	444	237	268	504
Postal Clerks	372	400	772	439	422	861
Shipping & Receiving Clerks	103	47	150	113	63	177
Telephone Operators	495	274	769	587	375	962
Clerical & Kindred, nec	4998	2957	7955	5763	4030	9793
Sales Workers	4958	2246	7204	5647	2652	8299
Craftsmen, Foremen, Kindred	7496	3381	10877	8523	4026	12548
Construction Craftsmen	2744	1429	4173	3160	1591	4751
Carpenters	722	262	984	804	288	1092
Brickmasons, Stone, Tile Setters	208	105	313	235	112	347
Cement & Concrete Finishers	68	61	129	85	69	154
Electricians	358	234	592	425	269	695
Excavating, Grading Mach. Oper	292	246	538	358	281	638
Painters & Paperhangers	530	177	707	586	191	777
Plasterers	49	2	51	48	-1	47
Plumbers & Pipefitters	367	240	607	437	267	704
Roofers & Slaters	65	44	109	78	49	127
Structural Metalworkers	62	40	102	73	44	117
Foremen, n.e.c.	704	327	1031	812	417	1230
Metalworking Craftsmen, Except Mech	323	5	328	328	24	352
Machinists +	132	-44	88	120	-44	76
Blacksmiths, Forgemen, Hammermen	9	-6	3	7	-6	1
Boilermakers	11	2	13	12	2	14
Heat Treaters, Annealers, Temperers	3	0	3	3	-0	2
Millwrights	19	11	30	23	14	37
Molders, Metal, Except Coremakers	4	0	4	4	-0	3

TABLE 16 (Continued)

MANPOWER DEMAND FOR ALL OCCUPATIONS IN THE WASHINGTON SMSA

Occupation	Numbers of Persons in 1975			Numbers of Persons in 1980		
	Annual Replacement	Annual Growth	Total Demand	Annual Replacement	Annual Growth	Total Demand
Patternmakers, Metal & Wood	21	13	34	26	18	44
Rollers & Roll Hands	2	0	2	2	0	2
Sheet Metal Workers +	84	29	113	94	39	132
Toolmakers, Diemakers, Setters +	26	-3	23	25	-3	22
Mechanics & Repairmen	2119	972	3091	2463	1150	3613
Airplane Mech. & Repairmen +	126	-17	109	122	-19	103
Motor Vehicle Mechanics +	690	233	923	745	235	980
Office Machine Mechanics +	62	57	119	79	79	158
Radio & TV Mechanics +	139	77	216	158	89	247
Railroad & Car Shop Mech	18	-3	15	18	-3	15
Other Mechanics & Repairmen	1124	621	1745	1330	765	2095
Printing Trades Craftsmen	342	57	399	362	86	448
Compositors & Typesetters +	167	-61	106	149	-66	83
Electrotypers & Stereotypers +	5	-8	-3	2	-9	-7
Engravers, Except Photoengravers +	13	6	19	15	7	22
Photoengravers & Lithographers +	57	60	117	75	75	150
Pressmen & Plate Printers	97	61	158	117	80	197
Transp. & Publ. Utility Craftsmen	393	282	675	472	373	845
Linemen & Servmn, Tel. & Power	362	290	652	443	378	821
Locomotive Engineers	25	-2	23	24	-2	22
Locomotive Firemen	6	-5	1	5	-4	1
Other Craftsmen & Kindred Workers	727	299	1026	820	370	1190
Bakers	50	12	62	54	17	71
Cabinetmakers	39	3	42	40	4	45
Cranemen, Derrickmen, Hoistmen	55	28	83	64	35	99
Glaziers	13	12	25	16	13	29
Jewelers & Watchmakers	28	-6	22	27	-5	22
Loom Fixers	0	0	0	0	0	0

TABLE 16 (Continued)

MANPOWER DEMAND FOR ALL OCCUPATIONS IN THE WASHINGTON SMSA

Occupation	Numbers of Persons in 1975			Numbers of Persons in 1980		
	Annual Replacement	Annual Growth	Total Demand	Annual Replacement	Annual Growth	Total Demand
Other Operatives & Kindred	3057	1059	4116	3390	1455	4844
Asbestos, Insulation Workers	17	13	30	21	15	36
Auto Attendants, Gas & Parking	421	200	621	465	207	672
Blasters & Powdermen	2	1	3	2	1	3
Laundry & Dry Cleaning Oprs	295	27	322	305	44	349
Mine Operatives, Laborers, nec	11	-7	4	9	-7	2
Meat Cutters, Exc. Meat Packing	169	35	204	183	53	235
Operatives & Kindred, nec	2135	795	2930	2400	1150	3549
Service Workers	9789	4964	14753	11661	6749	18410
Private Household Workers	1371	197	1568	1431	205	1636
Protective Service Workers	1190	282	1472	1356	467	1823
Firemen +	163	37	200	176	57	233
Policemen, Detectives, Etc. +	413	20	433	421	35	456
Guards, Watchmen, Doorkeepers	616	226	842	761	377	1138
Food Service Workers	2264	1309	3573	2663	1646	4309
Bartenders	297	158	455	353	191	544
Cooks, Exc. Private Households +	748	340	1088	863	439	1302
Counter & Fountain Workers	282	295	577	369	371	740
Waiters & Waitresses	931	514	1445	1072	640	1712
Other Service Workers	4953	3225	8178	6216	4486	10702
Airline Stewards, Stewardesses +	50	71	121	71	84	155
Attendants, Hosp. & Other Instit.	868	1038	1906	1309	1470	2779
Charwomen & Cleaners	426	205	631	512	303	815
Janitors & Sextons	1046	250	1296	1201	441	1642
Nurses, Practical +	381	440	821	567	643	1210
Other Service Workers, nec	2165	1161	3326	2519	1475	3994
Laborers, Except Farm & Mine	2525	790	3315	2750	934	3683
Farmers & Farm Workers +	226	-86	140	200	-79	121

NOTE: + Designates occupational classifications for which post-secondary education is either desirable or essential.

TABLE 16 (Continued)

MANPOWER DEMAND FOR ALL OCCUPATIONS IN THE WASHINGTON SMSA

Occupation	Numbers of Persons in 1975			Numbers of Persons in 1980		
	Annual Replacement	Annual Growth	Total Demand	Annual Replacement	Annual Growth	Total Demand
Opticians, Lens Grinders, Polish.	14	5	19	16	7	23
Inspectors, Log & Lumber	6	6	12	8	8	17
Inspectors, Other	91	52	143	110	70	180
Upholsterers	41	22	63	48	29	77
Craftsmen & Kindred Workers, nec	370	156	526	415	180	595
Operatives & Kindred Workers	5068	1864	6932	5598	2333	7932
Drivers & Deliverymen	1607	690	2297	1775	740	2515
Drivers, Bus, Truck, Tractor	1127	474	1601	1245	527	1772
Deliverymen, Routemen, Cab	476	216	692	525	213	738
Semiskilled Metalworking Occupations	326	117	443	357	139	496
Assemblers, Metlwrking Class A	16	3	19	17	3	20
Assemblers, Metlwrking Class B	66	-2	64	65	-2	63
Inspectors, Metlwrking Class B	28	0	28	28	-1	27
Machine Tool Operators Class B	27	-6	21	26	-6	20
Electroplaters	2	0	2	2	0	2
Electroplater Helpers	4	-1	3	4	-1	3
Furnacemen, Smeltermen, Pourers	3	1	4	3	0	4
Heaters, Metal	0	0	0	0	0	0
Welders & Flame Cutters +	179	123	302	211	145	356
Transp. & Pub. Utilities Operatives	57	-6	51	55	-6	49
Brakemen, Switchmen, Railroad	37	-7	30	35	-8	27
Power Station Operators +	14	0	14	15	1	15
Sailors & Deckhands	3	1	4	4	1	5
Semiskilled Textile Occupations	13	1	14	13	1	14
Knitters, Loopers, Toppers	0	0	0	0	0	0
Spinners, Textile	0	1	1	0	0	0
Weavers, Textile	0	0	0	1	0	1
Sewers, Stitchers, Mfg	12	1	13	13	0	13

How These Forecasts Can be Used

This section of the chapter presented forecasts of manpower requirements for the Washington Standard Metropolitan Statistical Area, the labor market around the District of Columbia. Like any other forecasts, they are subject to uncertainty, an uncertainty which increases as their dates get further away from 1971. This is due to the impossibility of forecasting precisely the future rates of growth of industrial sectors and the exact occupational mix in each sector. The uncertainty is particularly great in forecasting the growth of the federal government sector. Thus, the forecasts (particularly the 1985 forecasts) ought to be treated as indicative, rather than exact. By inputting new data in the forecast model, educational planners can achieve more precise estimates of future manpower requirements as time goes on.

The present results can be used, together with future updated forecasts and other inputs, to plan education and training to meet forecast manpower needs in the WSMSA. Some cautions must be observed. Some of the job openings will be filled by people migrating to the WSMSA from other parts of the United States. This will be particularly true for the professional and technical occupations which form a large share of the occupations relevant to higher education. Some graduates of public educational institutions will migrate out of the WSMSA, filling job openings outside of the area and not filling job openings in the WSMSA. Thus, education and training planners will need to exercise sound judgment in using the total manpower forecasts shown in this section.

Part III - Study on Manpower Requirements in Montgomery County

Introduction

At the request of community college officials in Montgomery and Prince Georges Counties, inquiries were made of 1890 employers about expected manpower requirements to 1976 in 90 different occupations.[14] A total of 80,311 jobs were surveyed in Montgomery County. Of the Montgomery County employers contacted, 68.7 percent returned usable replies. Replies represented 64.1 percent of all County nonagricultural wage and salary workers employed in establishments covered by the Maryland Unemployment Insurance Law and in noncovered industries (hospitals, educational institutions, and agencies of the local, state, and federal governments). Occupational data provided by responses were inflated within each industry group by category of employee size to a level representative of all employers in the county of the types contacted.

Results of such a study are only as valid as employers' estimates, and often tend to reflect what employers optimistically would like their future to be. In recognizing these facts and the possibility of distortion due to inflating sample data, authors of the study report advise caution in the use of results, especially where growth or replacement needs appear unusually high when compared with data from other sources. Employer estimates of manpower needs due to replacement and expansion produced total estimated additional needs for a five-year period.

Estimated Manpower Requirements

Shown in Table 17 are the occupations regardless of education level required reflecting the largest total number of manpower needs due to expansion and replacement factors. These data rather than those showing growth estimates for occupations are most useful for educational program planners.

Approximately 45 percent of the growth was estimated as occuring in the business occupations, 30 percent was in trades and industrial occupations, 8 percent each in data processing and service occupations, 5 percent in technical occupations, and 3 percent in health occupations. Estimates of needed numbers of workers for all occupations studied are shown in Table 18.

Employers were asked to indicate the level of education required by employees in each occupation as of 1971. Analyses of those data revealed positions requiring two or more years of college in significant numbers (100 or more) for the following occupations:

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[14] Research and Analysis Office, Employment Security Administration, Department of Employment and Social Services, State of Maryland, Occupational Outlook, November 1972.

Accountant
Accountant-Assistant
Commercial Artist
Bookkeeper, Clerical
Buyer or Purchasing Agent
Management Trainee
Personnel Worker
Secretary (specialized)
Outside Salesman
Inside Salesman
Management Trainee
Computer Operations Supervisor
Computer Programmer
Systems Analyst
Medical Laboratory Tech.

Medical Technologist
Licensed Practical Nurse
Registered Nurse
Library Assistant
Teacher
Social Welfare Assistant
Technician:
  Architectural
  Civil Engineering
  Electronic
  General Engineering
  Mechanical Engineering
Draftsman
Cartographer and Cartographic Technician

TABLE 17

OCCUPATIONS REFLECTING LARGEST TOTAL ADDITIONAL REQUIREMENTS FOR MANPOWER BETWEEN 1971 and 1976*

Occupation	Number of Additional Workers Needed	Occupation	Number of Additional Workers Needed
Salesperson, Inside	9,677	Personnel Worker	821
Food Service Worker	8,630	Nurse, Registered	765
Clerk, General Office	6,139	Electrician	745
Clerk-Typist	4,833	Law Enforcement	727
Carpenter	4,337	Management Trainee	690
Secretary-Stenographer	3,364	Draftsmen	665
Salesperson, Outside	2,316	Food Service Manager	653
Bookkeeper, Clerical	1,986	Computer Operator	637
Teacher	1,908	Systems Analyst	598
Key Punch Operator	1,730	Accountant Assistant	581
Secretary-Executive	1,598	Teacher's Aid-School	571
Accountant	1,508	Technician, Gen. Engineer	508
Auto Mechanic	1,436	Technician, Mech. Engineer	492
Technician, Electronic	1,134	Business Machine Opr.	469
Computer Programmer-Business	1,130	Electronic Repairman	456
Air Conditioning Mechanic	1,120	Computer Prog. Scientific	450
Service Station Attendant	1,002	Buyer or Purchasing Agent	417
Machinist	948		
Sheet Metal Worker	928		

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*Occupations for which the estimated annual average need was over 80 persons.

Source: Research and Analysis Office, Employment Security Administration, Department of Employment and Social Services, State of Maryland, Occupational Outlook, November 1972, Table F, pp. 26-28.

TABLE 18

ESTIMATED MANPOWER NEEDS FOR MONTGOMERY COUNTY IN SURVEYED OCCUPATIONS 1971-1976

Occupation	Expansion Needs in 5 Years	Replacement Needs in 5 Years	Total Added Needs in 5 Years
Total of Surveyed Occupations	24,843	47,380	72,223
Business Occupations	11,662	25,010	36,672
Accountant	913	595	1,508
Accounting Assistant	236	345	581
Artist, Commercial	103	120	223
Bookkeeper, Clerical	801	1,185	1,986
Bookkeeper, Machine	141	130	271
Business Machine Op.	239	230	469
Buyer of Purchasing Agent	212	205	417
Personnel Worker	451	370	821
Business Management			
Food Service Manager	103	550	653
Hotel-Motel Manager	10	10	20
Nursery Manager (Hort.)	87	-	87
Printing Production Mgr.	21	50	71
Service Station Mgr.	21	70	91
Transportation-Traffic Mgr.	4	55	59
Clerical			
Clerk, General Office	1,734	4,405	6,139
Clerk-Typist	1,528	3,305	4,833
Secretary-Executive	618	980	1,598
Secretary-Legal	52	235	287
Secretary-Medical	71	180	251
Secretary-Stenographer	754	2,610	3,364
Stenotype Operator	10	-	10
Sales			
Salesman, Outside	1,201	1,115	2,316
Salesperson, Inside	2,052	7,625	9,677
Trainee			
Management Trainee	215	475	690
Marketing Trainee	16	-	16
Real Estate & Insurance Trainee	69	165	234
Data Processing Occupations	2,794	2,295	5,089
Computer Operator	262	375	637
Computer Operations Sup.	58	50	108
Computer Programmer-Bus.	800	330	1,130
Computer Programmer-Sci.	360	90	450
Data Control Clerk	210	175	385
Key Punch Operator	790	940	1,730
Systems Analyst	313	285	598
Tabulating Mach. Opr.	1	50	51
Health Occupations	684	820	1,504
Dental Assistant	3	-	3
Dental Hygienist	5	20	25
Dental Lab. Tech.	182	-	182
Medical Assistant	11	-	11
Medical Lab. Tech.	66	55	121
Medical Technologist	48	40	88
Nurse, Licensed Practical	109	185	294
Nurse, Registered	245	520	765
Radiological (X-Ray) Tech.	15	-	15
Service Occupations	1,695	2,045	3,740
Public Service			
Correction Aide (Penal)	-	-	-
Fire Safety Officer	20	100	120
Law Enforcement Officer	432	295	727
Library Assistant	85	115	200
Recreation Leader	47	35	82
Social Welfare Assistant	36	-	36
Teacher	668	1,240	1,908
Teacher's Aide-School	321	250	571
Teacher's Aide-Day Care Center	-	-	-
Urban Planning Assistant	63	-	63

TABLE 18 (Continued)

ESTIMATED MANPOWER NEEDS FOR MONTGOMERY COUNTY IN SURVEYED
OCCUPATIONS 1971-1976

Occupation	Expansion Needs in 5 Years	Replacement Needs in 5 Years	Total Added Needs in 5 Years
Private Service			
Airplace Pilot	7	-	7
Air Traffic Controller	-	-	-
Industrial Security Officer	7	10	17
Mortician	-	-	-
Private Investigator	-	-	-
Technical Occupations	1,126	2,045	3,171
Cartographer & Cartographic Tech.	-	250	250
Technician Commun.	53	100	153
Technician Arch.	31	55	86
Technician, Chem. Eng.	14	20	34
Technician, Civil Eng.	131	75	206
Technician, Electronic	569	565	1,134
Technician, Gen. Eng.	63	445	508
Technician, Mech. Eng.	112	380	492
Technician, Nuclear or Radiation	29	10	39
Technician, Sanitation or Environmental	124	145	269
Trades & Industrial Occupations	6,882	15,165	22,047
Air Conditioning Mech.	530	590	1,120
Aircraft Mechanic	7	-	7
Trades & Industrial Occupations (continued)			
Appliance Repairman	79	170	249
Auto Mechanic	526	910	1,436
Auto Body Repairman	153	220	373
Carpenter	1,402	2,935	4,337
Cosmetologist	56	65	9
Draftsman	365	300	665
Electrician	560	185	745
Electronic Repairman	241	215	456
Engineering Aide	119	40	159
Food Service Worker	1,590	7,040	8,630
Landscaper	37	205	242
Machinist	693	255	948
Printing Trades			
Printing, Binder Operator	119	175	294
Printing Estimator	11	-	11
Printing Pressman	27	165	192
Printing, Process Cameraman	36	65	101
Printing, Typesetter	23	30	7
Other Occupations			
Service Station Attendant	162	840	1,002
Sheet Metal Worker	283	645	928
Welder	21	115	136

Part IV - Opinions About Need For Programs And Services

Local Employers

Part of the study involved meetings held November 12 and 14, 1973 which included invited executives from a representative group of major business, industrial, and government agencies and enterprises in Montgomery County. The purposes were: (1) to hear what employers felt to be their needs for persons to fill jobs for which more education and training beyond the high school but less than a four-year college degree level is considered essential or desirable and (2) to obtain viewpoints about future trends in needs for qualified manpower of this type. Twenty-three persons attended one of the two meetings for a discussion of these matters. A summary of the discussions follows.

Types of persons and jobs mentioned one or more times by executives, for which there is present and expected demand, are listed below.

Business

- Sales and Marketing
- Management Training
- General Clerical
- Typists
- Computer Equipment Operators
- Middle Management-Retailing
- Commissioned Sales Specialists
- Accounting
- Data Processing
- Management-Labor Relations
- Securities Secretarial (Spedialized)
- Public Relations
- Word Processing Equipment Operators (Graphic input-output devices)
- Junior Cost Analysts
- Modern Office Procedures

Basic Education

- Teach basic English and Math
- Teach how to Read and Write

Health Services

- Respiratory Therapists
- Licensed Practical Nurses
- Hospital-Management & Supervision
- Home Care Personnel
- Bio-Electrical-Electronics Specialists
- Ambulance Driver First Aid

Engineering-Trade/Technical

- Applied Junior Engineering
- Communication Transmission Systems
- Draftsmen
- Electronic Technicians
- Estimates (Construction)
- Building Maintenance (general skills and trades)
- Electrical Technicians
- Technical Writers
- Printed Circuit Technicians
- Auto Mechanics Technology
- T.V. Repair & Maintenance
- Business Equipment Maintenance and Repair
- Foreman Training-Human Relations

Service

- Food Service Management
- Food Service Preparation
- Hotel/Motel Management
- Para-Professional Teacher Aides (each specialized in a field such as math, general lab. etc.)
- Day Care Center Workers

Some other suggestions about ways the College could improve services were as follows:

1. The College could get to women desiring to return to the work force and provide programs for upgrading and retraining.

2. Establish a counseling program for women who want to go back to school--develop a testing center for guidance purposes available to these women.

3. Emphasize problem solving skills--employment experience indicates some of these skills are lacking in Associate of Arts graduates from the College.

4. Faculty members should visit (Federal Systems Center) the Center to see what is going on so college program can be more relevant. Job demands require broader concept of training, for example, secretaries who know the concepts of accounting in addition to secretarial skill proficiencies. There should be more cooperation between the College and the firms where graduates are employed.

5. More of a cooperative effort is needed between the College and employers in engineering to provide the technical training assistance needed.

6. College could offer management enrichment short courses for top craftsmen who aspire to be administrators or supervisors.

7. Develop a management on-the-job training program in cooperation with local business firms.

8. Establish a cooperative program with hospitals in the evenings or on weekends where college staff provide instructors in supervision and management.

9. Get more books in the library on labor and the labor movement in the United States.

10. The College could offer programs on location at the place of employment, programs designed for upward mobility of employees much like the program STRIDE now provided by American University at HEW.

11. The College could have a real impact by providing on a regular scheduled basis, once or twice a month, a college counselor who would spend several hours at the plant location seeing employees who are interested in further education.

12. A system for change is needed at the College to keep its occupationally oriented programs in tune with changing job requirements and take advantage of trends.

Some of the firms represented were reported to have various types of in-house training programs for employees, some quite elaborate. A common thread of discussion was that executives did not know that the college offers some of the programs it does, or that it had an interest in cooperating with employers to develop cooperative educational programs of mutual advantage. General interest and willingness to cooperate further was expressed. A representative of one large enterprise suggested the notion of a "College Week" which could be devoted to dissemination to employers information about offerings. Executives expressed pleasure at being invited by the college to discuss how the college could be of assistance and indicated they hoped such contacts could be continued.

At the close of one meeting (luncheon) ten executives present were invited to respond to a short questionnaire. These representatives represented approximately 22,000 employees.

All executives indicated there were opportunities for employment in their organization for persons with two years of technical or semi-professional training beyond high school, although one indicated the opportunities in his organization were limited. Four of the ten indicated that employees with two years of training beyond high school had replaced or supplemented some of the college graduates in their organization and another indicated this had perhaps occurred. When asked how two years of post-high school training had been recognized, one-half cited job advancement and initial hiring advantage. Four cited higher pay and another indicated this level of training was prerequisite for consideration in some jobs.

Seven of the ten executives indicated their company or organization had an organized training program. Four believed a more expanded college program of job improvement education could replace or supplement their existing program, and two indicated such a college program could partially do so. All executives indicated their organization encourages employees to find job-upgrading educational experiences. Three felt the existing educational facilities in the area were excellent in meeting the off-the-job training needs of their employees; four believed they were fair; two felt they were poor; and one did not respond. Sixty percent of the executives responding thought the existing educational facilities were either poor or only fair. One-half of the executives indicated they would be interested in participating in further study and discussion at a later date with Montgomery College officials concerning the need or advisability of developing more realistic programs of job preparation, upgrading, or retraining, and one-half indicated perhaps they would be interested.

One-half the executives found it necessary to recruit employees outside the Washington area. Reasons cited were local competition, desirable to counter regional bias, and mostly to obtain graduate level personnel.

Shown in Table 19 are the types of qualified manpower for which executives indicated there would be a demand in their organization.

TABLE 19

TYPES OF QUALIFIED MANPOWER FOR WHICH DEMAND IS EXPECTED BY EMPLOYERS

Type of Manpower	Number of Respondents	Type of Manpower	Number of Respondents
	A. Business		
Secretarial	8	Data Processing Technician	3
Stenographer	4	Assistant Buyer	2
Clerk-Typist	6	Merchandising & Marketing	1
Accountant	6	Commercial Artist	3
Data Programmer	6	Personnel Adm.	1
Contracts Administration	1		
	B. Engineering/Industrial		
Civil Eng. Tech.	1	Electrical Power Tech.	2
Mech. Eng. Tech.	3	Eng. Lab. Tech. (general)	1
Electronics Tech. (Communications)	3	Drafting & Design Tech.	6
Elect. Tech. (computer)	3	Architectural Draftsman	1
Elect. Tech. (industrial)	6	Industrial Supervisor	3
Instrumentation Tech.	3	Operating Engineer	2
Air Cond/Heating/Refrig. Tech.	2	Heavy Equip. Opr.	1
Printing Technician	4	Automotive Tech.	1
Composing Mach. Opr.	1	Technical Writer	1
	C. Service		
Cafeteria Mgr.	1	Teacher Aide	1
Edu. Audio/Visual Tech.	2		

The frequency with which various types of manpower demand were cited is relatively unimportant. The significance of these data is that they are indicative of needs which are deemed to exist by employers, but frequency of mention does not necessarily reveal extent of the need. However, the data do cooroborate another thread of discussion shared generally by executives that there is a major need in the area for adequately prepared and qualified secretarial, clerical, and stenographic manpower, particularly those who have executive and administrative assistant levels of ability.

Directors of Vocational Education

On November 29, 1973, directors of vocational education primarily from "down county" high schools and the central administrative staff of the Montgomery County Public Schools met with members of the Citizen's Advisory Committee and Montgomery College staff. The purpose of the meeting was to learn from knowledgeable persons concerned with occupational education at the secondary school level how they thought the college could better serve the occupational education needs of Montgomery County.

Spokesmen for the Public Schools explained that,while some types of vocational education programs were not offered at each high school an attempt was made in each of six administrative areas of Montgomery County to make offerings among the several high schools in the area. Most discussion focused upon the need for articulation of program offerings between the secondary schools and the college and the need for cooperative planning. Since some high school students would not have had secondary school level instruction in some occupational areas, while others would have had it, the need was cited for the college to offer two entry levels of programs in some fields.

Various program areas mentioned as examples where articulation should occur were as follows:

Automotive mechanics and technology--it was suggested that the college might appropriately become a diagnostic tune-up center and stress technology contrasted with mechanics.

Television repair and maintenance, hotel/motel management, air conditioning/ heating/refrigeration, food services, auto body repair, and electrical and electronics technology were program areas cited where articulation should occur. The need for planning between the college staff and staff of the public schools was mentioned several times during the discussion as being necessary to develop a continuum.

Several major points were made regarding guidance and counseling. The suggestion was made that the college and public schools should explore ways to cooperatively develop guidance and counseling programs. One suggestion was that the college should develop a course or courses aimed at job orientation to provide information on a broad area career ladder basis to assist students determine what career field he wants. Participants urged planners and program developers to define and differntiate between vocational education and career education and consider the broader approach.

The fact came out that this meeting was the first opportunity participants had had to discuss such important matters. Several participants issued pleas that this kind of communication should now be kept up between Montgomery College and the Montgomery County Public Schools.

Guidance Workers

Counselors and guidance workers from "down county" high schools and the central offices of Montgomery County Public Schools were invited to attend a meeting at Montgomery College on November 30, 1973. The meeting was to discuss how the College could better provide programs and services for residents of the county. Following are comments regarding college programs and services.

Several specific programs were suggested as needed. They were dental hygiene, broadcasting performing, auto mechanics, increased allied health programs including nursing and data process programming. Counselors stressed the need for both transfer and job-oriented programs at the College and offered accessible to students. Other miscellaneous comments were as follows:

1. The afternoon selection of offerings at Takoma Park is not good for early placement choices of advanced high school graduates.

2. The language instruction at the college level is not high enough.

3. There needs to be a clarification of honors program criteria No one knows what, "exceptional interests and unusual background" means as a qualification. Honors programs need to be available to college students on entry from high schools.

4. It is difficult for high school graduates to get to the Takoma Park campus for health-related programs.

5. College orientation should place more emphasis upon relevancy of college curriculum to student purpose.

6. Youth look to Montgomery College as a holding agency. Youth are withholding commitments because of social, political, economic, and technological changes and see Montgomery College as a place to avoid commitment, especially the more intelligent student. This suggests increased emphasis at the college on occupational guidance.

7. Counselors plead for the College to consider each student as an individual and permit some students to successfully specialize in occupational pursuits who cannot succeed in some related areas such as English. Perhaps a certificate program is the answer.

8. Communication seems to be almost entirely from the high schools to the college regarding students and none or very little from the College to the high schools.

9. Several suggestions urged that the counseling staff of the high schools and the college should "get together." One suggestion was that arrangements should exist so high school students could come to the college for a week, attend classes, and see what there is in various departments such as graphic arts, etc. A greater relationship than at present was urged between the college and high school guidance and counseling personnel and that discussions should continue on a continuing basis.

10. Counselors indicated the community did not know what was available at the college. The suggestion was made for a college "Coordinator of Information" to work with the high school counseling staffs.

A theme permeating the discussion was that there should be articulation of guidance and counseling efforts between the high schools and the college, that discussions of mutual problems should occur on a continuous basis, and that a two-way rather than a one-way communication system should be established.

College Faculty and Students

On November 6, 1973, meetings were held at both the Rockville and Takoma Park campuses and college personnel (faculty and students) were invited to express ideas about programs and services which should be offered by Montgomery College. The following ideas and suggestions pertinent to the study purposes were expressed.

1. There is lack of certification in certain service areas such as auto mechanics, TV-Radio repair and maintenance and electrical appliance repair. The college should consider developing licensing and certification programs in such areas.

2. Need for program development doesn't necessarily mean new programs altogether, for it might entail expansion of existing programs.

3. Concern was expressed about maintaining quality in college programs if the money tap is turned down. There was concern whether, with a limited financial constraint. the college is now doing well enough for those it services. A plea was made that solid college needs are met and that priorities recognize this.

4. Concern was expressed that further development of occupationally-oriented curricula and services not short change the liberal arts and sciences program.

5. The college should offer job retraining and refresher courses for persons already possessing degrees. Many persons in Montgomery County should be interested, especially citizens age 40-65.

6. The existing facilities should be used to maximum before new ones are developed--perhaps more use in afternoons. Concern was expressed that, with a decline in high school enrollments, there might be unused space several years ahead. The development of satellite centers was suggested as a means for providing more services to more people.

7. There should be more community college staff interchange. People should be re-educated as to when they can come to school. The college should maintain contact with its graduates and use the community as a resource in helping determine needs for programs and services. The college should promote its wares--newspaper ads and employer contacts were suggested means.

8. If the central administrative offices were not located on either campus people might not tend to think of one as a main campus more than the other one.

9. Concern was expressed that the focus of the study was upon the "down county" area and the question was raised about how people in that area were different than those elsewhere in Montgomery County.

Summary

1. The proportions of all persons living in Montgomery County employed in each of the major industrial classifications of agriculture-forestry-fisheries, construction, manufacturing, transportation-communications-public utilities, and government decreased between 1960 and 1970. Proportions employed in trade, services, and finance-real estate-insurance sectors increased. The largest percentages of employed persons are in the service industries (36 percent), government (21 percent), and trade (19 percent) sectors.

2. During the last decade total numbers of Montgomery County residents employed increased about 70 percent. The largest percentage increase was in the service industries; and, within this sector, largest increases were in legal, engineering, and miscellaneous professional services (218 percent), business and repair services (171 percent), and educational services (106 percent).

3. Although the proportion of all employed persons working in government declined, this sector had one of the largest percentage increases in absolute numbers of persons. In many ways, proximity of Montgomery County to the Nation's capital is reflected in the economy, including the occupational and industrial structure.

4. The largest percentages of persons working at a place in Montgomery County were in the service industries, government, and retail trade sectors.

5. The occupational makeup of Montgomery County residents was atypical compared to most other areas of the county. Approximately one-third engaged in a professional, technical, or kindred type of work. About 14 percent were either salaried or self employed managers or administrators, 22 percent were clerical and kindred workers, and about 12 percent were craftsmen, foremen, and operatives. About 6.6 percent were service workers. The largest shifts in occupational structure during the past decade were increases in percentages of professional and technical, clerical, and of service workers other than household workers and decreases in craftsmen and foremen, operatives, laborers, and household workers. The percentages of managers, administrators, and sales workers remained about the same.

6. Increasing percentages of Montgomery County residents work there also; this 1970 percentage was 50.5 percent. The proportion of women in the work force is increasing. Upsurges in economic activity due to Federal salary catch up boosts and influx of national and international service organizations are expected to level.

7. The total number of persons in non-farm jobs within Montgomery County in 1980 has been forecast to approximate 270,990 compared with the estimated January 1972 employment of 203,277.

8. Government service, miscellaneous business services, medical and other health services, construction, and educational services were forecast to be the largest growth industries in the Washington Standard Metropolitan Statistical area of which Montgomery County is a part. Certain other industries such as auto repair services and automotive dealers are expected to be among those in highest order of demand.

9. Occupations relevant to higher education for which highest annual demand is expected in 1975, 1985, and

1985 in the Washington SMSA were, in order of demand, secretaries, lawyers and judges, accountants and auditors, nurses, workers and teachers in the arts and entertainment, cooks, office machine operators, motor vehicle mechanics, medical and dental technicians and practical nurses. Next in order of demand were electrical engineers, personnel and labor relations workers, elementary and secondary teachers, draftsmen, social and welfare workers, physicians and surgeons, civil engineers, law enforcement personnel, college teachers, stenographers, designers, and economists.

10. Largest manpower requirement demands have been forecast in Montgomery County between 1971 and 1976 for the following occupations requiring preparation beyond the secondary school. They were:

- Accountant
- Accountant-Assistant
- Commercial Artist
- Bookkeeper, Clerical
- Buyer or Purchasing Agent
- Management Trainee
- Personnel Worker
- Secretary (specialized)
- Outside Salesman
- Inside Salesman
- Management Trainee
- Computer Operations Supervisor
- Computer Programmer
- Systems Analyst
- Medical Laboratory Tech.
- Medical Technologist
- Licensed Practical Nurse
- Registered Nurse
- Library Assistant
- Teacher
- Social Welfare Assistant
- Technician:
  - Architectural
  - Civil Engineering
  - Electronic
  - General Engineering
  - Mechanical Engineering
- Draftsmen
- Cartographer and Cartographic Technician

11. A number of manpower demands cited by employers corroborated those identified through research studies. Some Some not included among those cited in research studies follow.

- Bio-electrical-electronics specialists
- Food service mgmt and preparation
- Day Care Center workers
- Word processing equipment operators
- Air conditioning/heating/refrigeration technology
- Hotel-motel mgmt.
- Para-professional Teacher aides
- Auto mechanics technology
- Business equipment repair
- Printing technology

12. Employers suggested ways the college could establish cooperative working relationships with local industries and businesses to provide counseling services

and programs for management upgrading, employee upward mobility, updating technical knowledge of persons with degrees, and for refreshing job skills or retraining persons, especially women, who had been out of the work force but desire to enter or return. Employers stressed the need for the college to have a system for change which would keep its occupationally related programs in tune with changing job requirements.

13. Public school directors and teachers of vocational education emphasized the need for articulation between the college and secondary schools in a number of program areas and in the provision of guidance and counseling services. They recommended that two way communication channels should be maintained on a continuous basis between the college and the secondary schools.

14. Public school guidance workers stressed the need for articulation of guidance efforts between the secondary schools and the college and for improved two way communication channels. Several specific programs recommended by guidance workers was dental hygiene, broadcasting performing, auto mechanics, more allied health programs, and data process programming. Counselors indicated the community did not know what was available at the college.

15. College faculty and students suggested the college offer licensing or certification programs in such fields as auto mechanics, T.V.-radio repair and maintenance, and electrical appliance repair. Job retraining and refresher courses for persons with degrees were recommended.

16. College faculty members expressed concern that quality be maintained in offerings, that a system of priorities be used in program development or expansion, and that every effort should be made to fully utilize existing facilities before others are developed. They recommended more community-college interchange and communication.

CHAPTER IV

MIDDLE MANPOWER EDUCATION FOR THE 1970'S*

Introduction

In this chapter are presented a discussion of the middle manpower concept, problems and concerns regarding the role of the community college in providing middle manpower development educational programs, some national trends affecting the future of demands for these programs, and an analysis of middle manpower needs on the national level. While the brief supply-demand analyses presented here give the national picture, they may seem to have little bearing, in some respects more than others, on the parochial situation in a given community college district. Because of the mobile character of modern society, enlightened planning of curricula and services should take into account those forces and trends which portend the future.

Recipes for "instant curriculum development" have not been put forth. However, for local forward-looking planning, the ideas and data presented here should serve as a think piece about community college career education for middle manpower occupations. A message that should come through clearly is that there is no substitute for careful, objective, local planning.

Concept of Middle Manpower Development

Three new terms have entered the lexicon of American education during recent years -- postsecondary education, career education, and middle manpower development. The National Commission on the Financing of Postsecondary Education has provided the following definition of post-secondary education:

> Postsecondary education consists of formal instruction, research, public service, and other learning opportunities offered by education institutions that primarily serve persons who have completed secondary education or who are beyond the compulsory school attendance age, and that are accredited by agencies officially recognized for that purpose by the U.S. Office of Education or are otherwise eligible to participate in federal programs.

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*Prepared for the committee by Dr. Norman C. Harris, Professor of Higher Education, Coordinator of Community College Development (and Consultant for Arthur D. Little, Inc.), The University of Michigan, Ann Arbor, Michigan, November 1973. (Dr. Harris has the reputation of being the nation's foremost expert in the field of Middle Manpower Development and community college programs for this purpose.)

Central to the idea of career education is the concept that all education, from the early grades right on into college, can be associated with the future career of the individual. The necessity to do away with the centuries-old dichotomy between "practical" education and "academic" education is inherent in the use of the term "career education." Also a part of the concept are such ideas as the dignity and worth of all work, the career ladder idea, and the increasing necessity for post-secondary or collegiate occupational education for a large percentage of jobs in the U.S. labor force. Career education is a new educational thrust intended to provide the same kind of opportunities to "emerging" students[1] as have been afforded for decades to inner-directed and highly motivated college and university students. Since it deals for the most part with emerging students, career education must have within its structure strong elements of career guidance and exploration of careers, including, if possible, actual work experience or internships.

Career education is seen as beginning in the lower grades, perhaps as early as the third, and continuing right on through high school and into the two-year college and other postsecondary institutions. In theory, baccalaureate and advanced degree programs in colleges and universities are also career education, but the everyday usage of the term does not, at present, include these traditional avenues to professional careers.

In one sense, "career education" could be merely regarded as a new euphemism for "vocational-technical" or "occupational" education. However, it is really different in meaning in that it involves the common schools (K-12) and the (public) two-year colleges in an all-out educational effort, lending status to career preparation, ending the vocational education/liberal arts education dichotomy, and providing exploratory experiences and career guidance at all levels from the early grades on into post-secondary education.

Middle manpower development is a concept which describes the educational preparation necessary for that rapidly increasing segment of the manpower spectrum which lies between the recognized professions on the one hand and the trades and crafts on the other. Educationally, the middle manpower occupations can be loosely categorized as demanding education and training beyond the high school, but not to the level of the baccalaureate degree. Sharp distinctions cannot be made, of course, and many persons prepare for middle manpower jobs through work experience, home study, and military training schools. By the opposite token, and for a variety of reasons, some college graduates also become a part of the middle manpower work force.

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[1] See "Emerging Students: Career Education and Career Goals," by Jonnie Ruth Clarke, in Emerging Students and the New Career Thrust in Higher Education, American College Testing Program, Iowa City, Iowa, 1971.

The term "middle manpower" subsumes a number of other designations frequently encountered, such as para-professional, semi-professional, sub-professional, technician, foreman, middle management, engineering aide, and even certain of the highly skilled trades and crafts. Taken together, middle manpower occupations make up about 42 percent of the labor force of the United States as the nation nears the midpoint of the 1970 decade (see Chart I).

Another way to look at the middle manpower occupations is to consider the relative balance between manipulative activity and cognitive activity as the worker goes about the daily job routine. On a scale of "percent cognitive activity," middle manpower jobs generally lie in the range from about 50 percent cognitive to perhaps 80-85 percent cognitive (see Chart I-A).

Since concepts can be clarified by examples it will be helpful to study Chart II briefly. Five broad areas of economic activity are listed across the top, and three flexibly defined "levels" of jobs are indicated down the left side. In the rectangles of the matrix thus formed there are listed some typical job titles for each level and economic area.

Even in 1980, according to Flanders, only 20 percent of all jobs will require a college degree.[2] And, it is well known throughout industry, business, government, public service, and even agriculture, that the technological and cognitive demands of jobs are continually increasing with the result that postsecondary education is now indicated for jobs which a decade or two ago were filled by persons with a high school or even a grade school education. How much of the trend is artificial -- a result of arbitrary "educational upgrading" of jobs[3] -- is a moot point, but the fact remains that educational requirements for nearly all jobs are rising. The 42 percent figure indicated in Chart I could well be at 50 percent by the mid-1980's.

Flanders also believes that despite significant increases in professional and managerial occupations, four out of five jobs will still require less than four years of college.[4] The demand for people with

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[2] Russell Flanders, "Employment Patterns for the Seventies," Compact, August 1970.

[3] See College Graduates and Jobs, a report of the Carnegie Commission, McGraw-Hill Book Co., N.Y., 1973, pp. 3 and 48.

[4] Ibid.

CHART I

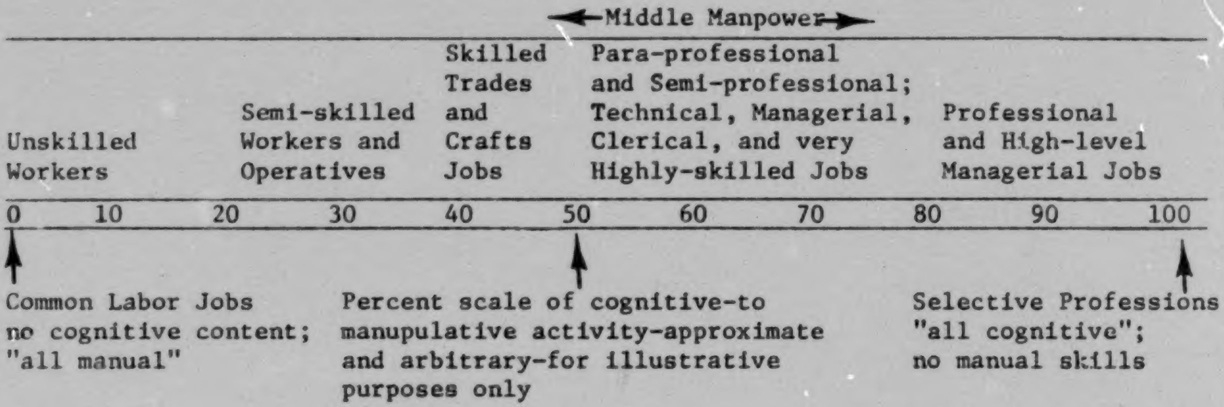
DISTRIBUTION OF LABOR FORCE BY OCCUPATIONAL GROUPS
UNITED STATES, 1960 and 1975 (Est.)

Occupational Levels	Percent of Total U.S. Labor Force		
	1960	1975 (Est.)	
Professional and high level managerial	6	12	
Para-professionals, semi-professionals, high-level technicians	3	6	Middle Manpower 1960=32% 1975=42%
Middle-level technicians, mid-management, foremen, leading men	5	9	
Clerical, sales, and kindred, not including semi-skilled	10	14	
Craftsman, journeyman, very highly-skilled workers	14	13	
Semi-skilled, and operatives in industry	20	16	
Clerical and sales, semi-skilled	11	9	
Service workers, all fields	13	13	
Unskilled workers, including farm and mine	15	8	

Source: Norman C. Harris, University of Michigan

CHART I - A

MIDDLE MANPOWER JOBS LOCATED ON A MANIPULATIVE-COGNITIVE SCALE


Middle Manpower
Unskilled Workers
Semi-skilled Workers and Operatives
Skilled Trades and Crafts Jobs
Para-professional and Semi-professional; Technical, Managerial, Clerical, and very Highly-skilled Jobs
Professional and High-level Managerial Jobs
0
10
20
30
40
50
60
70
80
90
100
Common Labor Jobs no cognitive content; "all manual"
Percent scale of cognitive-to manupulative activity-approximate and arbitrary-for illustrative purposes only
Selective Professions "all cognitive"; no manual skills

Note: It should be recognized that the lines of demarcation used for illustration in the diagram do not really apply in practice. The spectrum of jobs from "all manual" to "all cognitive" is continuous, not discontinuous.

Source: Norman C. Harris, University of Michigan

CHART II

EXAMPLES OF "MIDDLE MANPOWER" JOBS IN FIVE FIELDS OF ECONOMIC ACTIVITY
UNITED STATES, 1970

	Fields of Economic Activity				
Occupational Groups (Clusters)	Agriculture and Nat. Resources	Business	Health	Industry/Engr./Science	Human Services
Para-Professional Semi-Professional Sub-Professional	Agric. Research Tech. Farm Equipt. Designer Fisheries Research Technician Forestry Aide Landscape Designer Plant Propagation Technician Soils Technician Veterinarian Aide	Accountant (not C.P.A.) Advertising Designer Branch Mgr. (Bank, Store, Office) Buyer-Purch. Agent Credit/Collections Manager Insurance/Real Estate Salesman Personnel Analyst Sales Manager Salesman (Outside) Secretary Systems Analyst	Dental Hygienist Dental Lab. Tech. Medical Lab. Tech. Medical Records Technician Nurse (Registered, but non-BS degree) Operating Room Tech. Physical Therapy Technician Psychiatric Tech. X-ray (Radiologic Technician	Areospace Technician Architectural Design Technician Civil Engr. Technician Computer Programmer (Science) Electronics Engr. Tech. Mech. Engr. Tech. Sales "Engineer" (non-degree) Science Research Tech. (Physics, Chemistry, Biology, Oceanography, Astron., Meteorology) Tech. Writer (Illustr.)	Audio-Visual (Media Technician) Fire Dept. Officer Law Enforcement Officer Librarian Assistant Recreation Leader Sanitation Tech. Social Worker Aide Teacher Aide Urban Planning Technician
Highly-Skilled Technicians Foremen Leading Men	Agri-Business (Owner-Mgr.) Agri-Business (Salesman) Crop Duster (Aviator) Farm Mgr. (Owner) Horticulture Tech. Irrigation Specialist Nursery Operator Ranch Foreman	Bookkeeper Business Data Programmer Credit Interviewer Department Manager Owner-Mgr., Small Business Service Manager Stenographer	Certified Med. Lab. Assistant Dental Office Asst. EKG Technician Medical Office Asst. Mental Health Wkr. Occup. Therapy Tech. Physical Therapy Technician Practical Nurse	Air Cond./Refrig. Tech. Automotive Technician Building Construction Mech. Design Tech. (Drafting) Hydraulics Technician Instrumentation Tech. (Automation) Industrial Supervisor (Foreman) Operating "Engineer" Quality Control Tech. Tool & Die Technician	Chef Dining Room Hostess Fireman Hotel/Restr. Mgr. Nursery School Operator Owner-Mgr.(Service Establishment) Police Patrolman Tourist Guide Welfare Agency Clerk
Skilled Workers	Animal Husbandry Specialist Farm Equipt. Operator Farm Equipt. Repairman Feed Mill Operator Fisheries Worker Foods Processing Plant Operator	Bank Teller Cashier Data Processing Tech. Duplicating Services Technician General Office wkr. Sales Clerk Typist-Clerk	Hospital Aide Inhalation Therapy Aide	Automotive Service Mechanic Building Trades Craftsman (e.g.., Carpenter, Plumber, Electrician) Heavy Equipt. Operator Machinist (Journeyman) TV/Radio Service Mechanic	Baker Barber Cook Cosmetician Service Station Attendant Waiter/Waitress

technical knowledge and skills is growing nearly twice as fast as for any other occupational group. The eagerness with which students continue to seek, and counselors to advise, the baccalaureate degree is therefore a matter of considerable concern. Chart III shows in graphic form the magnitude of the "expectation gap" which will apply to millions of young deople during the 1970's and beyond. A concerted and continuing effort must be made to interest more and more young people in careers at middle manpower levels, where their abilities and competencies will "fit" the demands of the occupation. Community colleges must adopt career education as their primary role and provide the realistic, high-quality occupational training that results in a high level of competence and job placement.

Several types of institutions offer educational programs for middle manpower education. They are community colleges, technical institutes, area vocational technical schools, private trade and vocational schools, and four-year colleges. Community colleges offer secondary career education in a great variety of settings and educational "packages." Well-equipped laboratories, shops, and classrooms provide excellent up-to-date "hardware" and "software" for acquiring both knowledge and skill. Programs and courses of many and varied levels and lengths are offered, but there are three general categories into which most programs can be grouped:

1. Two-year, associate degree, college-technical level programs, preparing para-professionals, semi-professionals and high-level technicians;

2. Two-year certificate programs with the major emphasis on skill development, preparing persons at the skilled-craft, foreman, and mid-management levels; and

3. One-year or shorter-term programs emphasizing specialized skills, to train or retrain persons for specific jobs.

Concerns and Problems Regarding the Community College Role

Despite the apparent promise of community colleges for middle manpower career development, there are troublesome signs that they are falling short of their potential for the task. Concerns include the following:

1. Even after four separate and massive attempts in the political arena since 1958, the federal acts governing the distribution of federal vocational monies are still worded in restrictive ways which effectively militate against the establishment and operation of college-level career education programs. These monies are still under the operational control of the secondary school-oriented vocational education establishment, and the provisions of the Educational Amendments of 1972 (when and if they are fully implemented) will strengthen that control.

2. There is mounting evidence that many community colleges have come under the influence of administrators and faculty who regard education and training for an economic purpose as being somehow a tool of "corporate capitalism." Large numbers of students today also are anti-materialistic and eschew any thought of preparing themselves for making a living. "Education," they say, "is for improving the quality of life, and should not concern itself with vocationalism." Having gradually become accustomed to an over-supply of baccalaureate and advanced-degree philosopher kings, it now appears that we may have an epidemic of "disadvantaged" philosopher kings coming out of the community junior colleges.

3. Partly as a result of (2), but partly from other causes (general education requirements, inflexible scheduling, credit-hour and degree requirements, etc.) many students who are inner-directed, and who know already quite exactly what they want in an occupational education program, reject the junior college and turn to a school or college with specialized vocational-technical programs.

4. The limited attention given to placement and follow-up of graduates. Community college placement offices (when they exist) seem to be more concerned with finding part-time jobs (casual placement) for students to earn money while they are in college, than they are in placing graduates of the college's career education programs in jobs for which they have been receiving preparation. And, follow-up of the continued contact with graduates gets only minor attention in most colleges.

Community colleges face some tough competition from three sides -- the public area vocational schools (tuition free in many states, "realistic" programs, good contacts with industry, effective placement of graduates); the private/proprietary schools (high tuition, but "no-nonsense" programs, intensive instruction leading to completion and job placement in a short time, good business and industry contacts, and "guaranteed" placement); and nearly two hundred four-year colleges (the "lure" of going to a "real" college, the attraction of a baccalaureate degree with the assumption of increased economic and social mobility as a result).

To compete successfully with these institutions and not regress in public esteem and support, community colleges are going to have to chart some new directions for progress in the 1970's. These new directions would, in the opinion of Dr. Harris, include all the following:

1. Begin giving *real* emphasis to career education, not just lip service.

2. Provide programs at several levels of rigor and of differing lengths of time, to suit the job-oriented students as well as the career-oriented students.

3. For all but the associate degree programs, remove general education requirements and provide for large blocks of time in hands-on instruction -- realistic job competency training.

4. Improve the quality and *standards of attainment* in all programs. Provide for mastery learning of the required job competencies before a certificate or an associate degree is awarded. Students who do not reach these standards would not receive the certificate or degree.

5. Build the image of the community college as the place to go for career education, instead of "the place to go if you can't go anywhere else," the image it now all too often has.

6. Tone down the image of the community college as a "new social invention." We have been on this "kick" for much too long. This image of the community college as a place where "learning is easy," where "everybody passes and nobody fails;" the image of the community college as the institution which should tackle any and all social ills of the nation -- these images must go or disaster awaits just around the corner. Community colleges are educational institutions, and as such they are domains for learning and teaching, for quality and excellence, and for standards of attainment and levels of competence. Unless these colleges get back on the right track soon, Mr. Corcoran's prediction about "slums of education" will come true.

Methods Used in Manpower Planning

Several different approaches have been used to manpower planning.[5] These methods include: (1) the extrapolation of past trends; (2) local or regional (sometimes SMSA) surveys; (3) target setting, particularly in non-free planned economy countries; (4) market adjustment, which assumes that economic and cultural incentives will operate to guide youth and adults in education and training programs to provide an adequate supply to meet demand; and (5) the national goals approach based on assumptions of what *should be* rather than on "play-of-the-market" factors.

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[5] In the interest of brevity, and with full realization of the importance of women in the work force, the term "manpower" will be used as inclusive of both sexes.

Futurism in Manpower Planning

Most of the five approaches listed above attempt to incorporate a few guesses about the future, but none really takes a hard look at what the next 20 years is likely to bring. For the short run, say five years, it is probably safe to say current manpower classifications both by industry and by occupational groups may remain relatively stable. But in the long view (and certainly community colleges and technical institutes must take the long view, since lead time from inception of an idea, to implementation of a program, and to the actual production of graduates is often six to ten years), a rather remarkable impact on the work force can be expected as a result of several futurist developments which will be of overriding concern over the next ten years. A brief discussion of some of these follows.

1. The energy crisis. Oil and natural gas supplies in the United States are considered by some persons to be insufficient for our current needs, let along future needs. World wide resources, though ample for the short run, are: (1) controlled by nations and interests not always friendly to the United States and could be cut off without notice at any time; and (2) costing billions of dollars per year which is creating havoc with our balance of trade and the valuation of the dollar. It is no joke to say that energy fuels the economy, and that without a successful development of energy sources other than petroleum, growth of the economy will be small, if indeed not negative, and massive unemployment will result. Strategies for the future include all the following, and manpower planners and curriculum planners should watch these developments very carefully:

    a. Building the central thrust of our energy policy around coal, of which we are reported to have a 300-year supply. This would mean developing new "packaged" heating systems for homes and commercial establishments; plants for converting coal to liquid and gaseous fuels; providing catalytic converters and other devices for reducing pollution; and improving methods of mining, transporting, and processing the coal. These efforts will run counter to the recent thrust of environmental improvement. Compromises will have to be made, and every new thrust and new compromise has its manpower implications.

b. Multiplying, many-fold, the output of atomic energy (fission) plants. This could easily be done, but here again compromises with environmentalists will have to be reached.

c. Initiating a crash program of the magnitude of the Manhattan Project or of NASA to make the major breakthroughs the United States needs for control of thermonuclear fusion. Once these processes are possible on a macro-scale, the energy worries will be essentially over. But again, ecological and environmental considerations are involved.

d. Establishing national policies which will force a drastic reduction in the use of energy. Allocations and priorities boards would have to be set up and enforcement bodies staffed. The first moves would probably involve gasoline rationing, and in that event commuter colleges where most students drive automobiles to the campus will be hard hit. Community colleges may feel the impact of these events this winter. This alternative will tend to reduce GNP.

e. Developing certain other more "exotic" energy sources, such as solar energy, geothermal energy, and energy from the oceans. All of these are in the laboratory stage or the pilot plant stage, and a great deal of further development will be needed before plants can be "put on the line" with commercially sizable energy outputs.

All of these energy considerations involve needs for science and engineering technicians, mechanics, skilled craftsmen, middle management workers, accountants, secretaries, and similar workers. As a matter of fact, the manpower needs of the energy problem will be met at perhaps the 50 percent level, from middle manpower as defined in the introduction section.

2. *The world-wide food crisis*. This year (1973), the United States was brought suddenly to realize the narrow gap between abundance and scarcity. Several years of low prices for farmers; farm policies inherited from the days of over-production; scattered adverse weather conditions; and finally the Russian grain sale -- all contributed to the first food scarcity in America since World War I. Another factor, one which will continue to exacerbate the situation, is that several recently affluent nations are now able to buy large quantities of United States agricultural products and will bid up the price beyond what American consumers are accustomed to paying. There are two portents for the future here -- first, there must be an increase in agricultural production, and second, the American consumer will probably have to become accustomed to spending a larger share of his income on the food budget.

   The necessity to increase agricultural production has direct implications for community college curriculum and middle manpower development. There will be need for more programs in agri-business, agri-mechanics, crop production, animal husbandry, and veterinary technology; and a somewhat stepped-up recruitment program so that students will be interested in entering training programs for these careers.

3. *Environmental improvement*. As desirable as this goal for the future is, it runs counter to both of the first two futurist trends discussed above. Almost anything that is done about energy (except a drastic reduction in its use) means problems for the environment. More effective agricultural production, as well as putting more land into production, both run counter to the wishes of environmentalists. It remains to be seen, of course, how persistently environmentalists would continue to lobby if they themselves were cold or hungry.

However if, in preserving natural beauty and the environment, natural resources such as watersheds, forests, and fisheries can be *developed*, then the two thrusts need not be always antithetical.

Manpower planning for environmental improvement goals is fraught with many uncertainties. The *need* is there, but the *demand* is not developing very fast. In fact, graduates of many of the early programs planned by community colleges in the late 1960's did not find employment in an environment related job. It is a moot question as to whether a massive social/scientific problem of this sort is best solved by a "horizontal" manpower development approach (i.e. by creating new, specialized, narrowly job-oriented curriculums such as air-pollution technology, water resources technology, etc.), or by a "vertical" approach, producing broad-discipline technicians of the more traditional kind (engineering technicians, chemical technicians, biological technicians, etc.) and then managing their attack on the total problem using a systems approach, with critical path analysis, PERT, MBO, and all the techniques of management developed over the past three decades.

The point here is that community colleges and post-secondary institutions in general should be somewhat slow to jump on the bandwagon of new narrowly specialized job training programs, especially if the jobs are at semi-professional or technician levels. The proliferation of dozens of associate-degree technician and middle management curricula may be inadvisable. A "cluster" approach is much to be preferred for associate degree programs, leaving the job-oriented, specialized training programs for the one-year or shorter-term certificate level.

4. The American role in international trade. Two unusual and sobering phenomena have surprised some citizens recently and often -- negative balances of trade, and accompanying dollar devaluations. Despite all the rhetoric about causes and remedies, the basic causes lie in the fact that people elsewhere (Japan, Taiwan, Western Europe) are producing quality products more efficiently, and at less cost, than the United States. Either their machinery and plants are better, or their labor force works more efficiently, or both. In any event, the time when the American economy could prosper in world trade and at the same time provide shorter hours and higher pay to American workers is over. The problem reduces to which worker will produce more of a high-quality product within a given wages-and-hours framework, the Japanese, the German, or the American.

Strengths in the world market seem to lie in two broad areas -- food production, and the design and production of complex and sophisticated (and new) manufactured products. No nation in the world can compete with our agriculture, if the present technology is kept. And no nation, up to now at least, can match the American research, design, and production of highly complex, highly capital-intensive, sophisticated (and new) machines and manufactured products (witness jet aircraft and computers). However, after designs are complete, and manufacturing processes become routinized, simplified, and repetitive, other nations can and do out-produce the United States, and they can outsell domestic products at lower prices not only in foreign markets, but by invading the United States market itself (witness television sets, small automobiles, bicycles, office equipment).

As a national goal then, the capabilities of the work force must be kept high. Since unit costs for American assembly line and bench workers are not competitive with similar workers in many foreign countries, a further reduction will be needed in the amount of this kind of work by automation and mechanization. Continuing the trend of the past 20 years, there will have to be further improvements in the work force, made possible through post-secondary education and training, from semi-skilled and operative classifications into highly-skilled and technician classifications. This means even more emphasis in the future on community college programs in technology fields, highly-skilled craftsman training, and middle management (business) training. The alternative, which would be unpalatable to organized labor, is to reduce wages for unskilled, semi-skilled, and operative level jobs, in order to be competitive with foreign producers.

5. A final futurist idea is that of the no-growth society. With its roots in such ideas as population control, world food crises, energy shortages, and environmental degradation, the idea of "no-growth societies" has fired the imagination of a number of sociologists, philosophers, political scientists, and futurists in recent years. The sobriquet, "The Club of Rome" has emerged as a generic name for a group which continues its deliberations and writing after its initial meeting in Rome in 1972. Zero population growth (ZPG) is seen as the first necessary step, followed by a cooling-off of economies to a no-growth level, and finally a life-style which reflects greater concern with the "quality of life" (whatever that means) than with material consumption. The implications which the no-growth society would have for the poor, for the affluent, for advanced nations, and for underdeveloped and emerging nations, are all discussed in the current issue of Daedalus.[6]

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[6] Daedalus, Fall, 1973. Entire issue is on the No-Growth Society.

> The implications for community colleges of the no-growth society, or of attempts to attain it, are extremely difficult to project. Most certainly there would not be a high demand for manpower training for industry and business, since making "things" would be antithetical to the tenets of the no-growth society. The public services, human services, health, and artistic fields would probably be good bets, but where the money would come from to employ millions of workers in these fields, if the economy was static, is hard to say. Much more attention will have to be given to these matters before useful ideas for curriculum planners will emerge.

An Analysis of Middle Manpower Needs

Presented below is an analysis of the supply-demand situation for middle manpower workers over the next six years, organized into five major fields of the economy -- (1) Agriculture/Natural Resources, (2) Business, (3) Health, (4) Industry/Engineering/Science, and (5) Public (Human) Services.

In general, a cluster-of-occupations approach is taken, but some specialty occupations are discussed in detail. The projections have been pulled together from such sources as the following:

The Manpower Report to the President
Occupational Outlook Handbook
Reports of the National Industrial Conference Board
Studies of the Bureau of Labor Statistics, USDL
Publications of the U.S. Office of Education
Surveys made by the American Association of Junior Colleges
Publications of the Engineers Joint Council
Articles in current journals and newspapers
Research done at the Center for the Study of Higher Education, The University of Michigan
Telephone "surveys," querying a dozen key leaders in the community college occupational education around the United States
Reports of the U.S. Public Health Service
Reports of the U.S. Chamber of Commerce

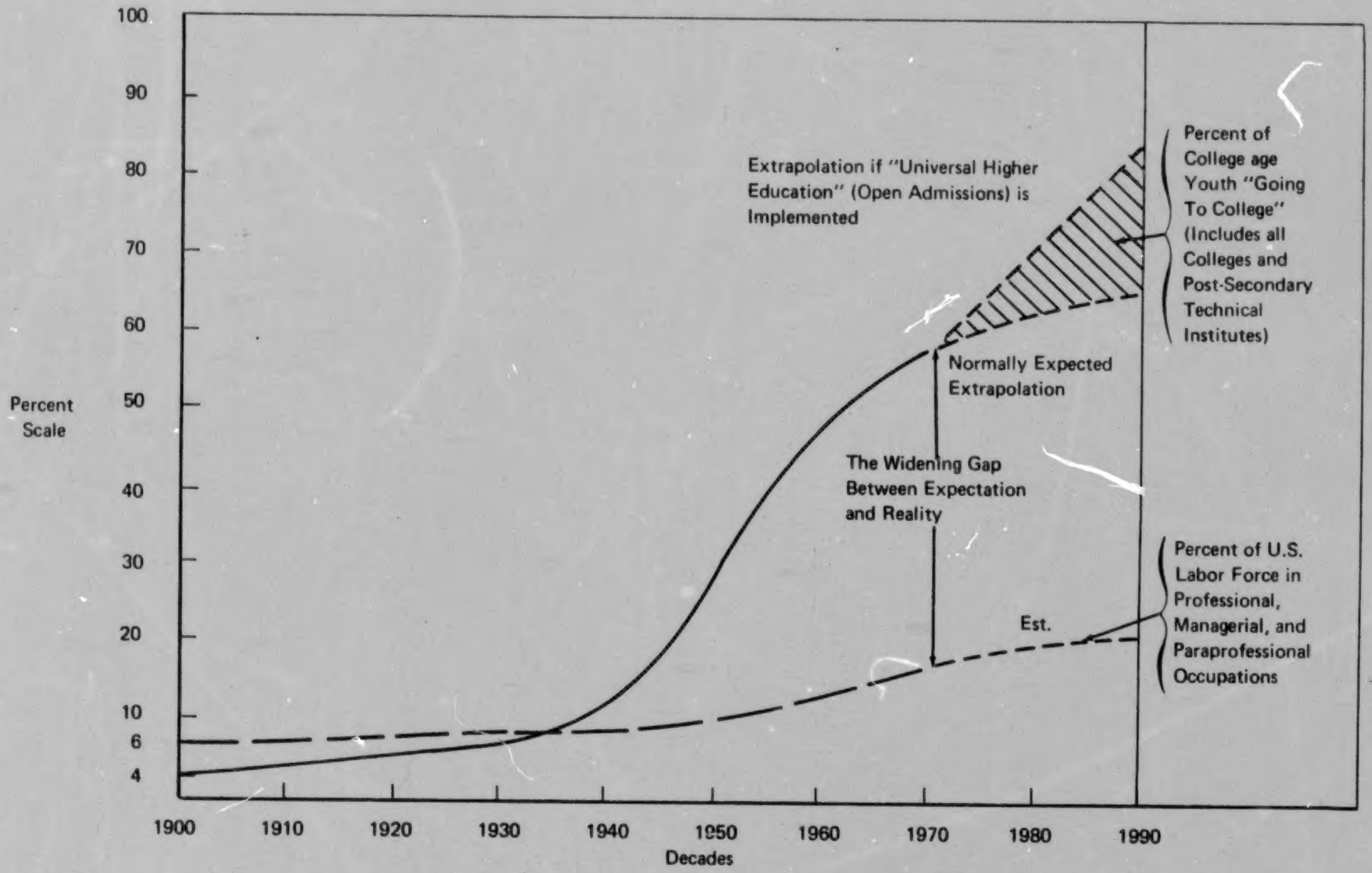

CHART III

HIGHER EDUCATION AND HIGH-TALENT MANPOWER
Comparison Of College-Going Trends
With Growth In Professional Occupations
United States, 1900 – 1990

1. Supply-Demand Factors in Agriculture/Natural Resources

Agriculture, over the past half-century, has been America's most efficient economic activity. The production per man hour on America's farms is the envy of the world. One United States farmer, with the benefits of mechanization, managerial know-how, and advanced science-based production methods, produces enough food for nearly forty other people. This statistic is rendered more meaningful when it is realized that, in many countries of the world, 70 percent of the labor force must be engaged in agriculture to produce enough food.

Now that foreign purchasers, along with increased indigenous demand, have caused food shortages in some commodities, agricultural production will trend upward. Much new acreage will be brought under cultivation, and even better production methods will be applied to existing farms and ranches. The total number of jobs in agriculture may even rise slightly over the rest of this decade (reversing a steady decline of thirty years' duration), but the new jobs will not be "farm labor" jobs. Cost factors (unionization of farm workers) and factors of production efficiency will demand an even greater mechanization of planting and harvesting activities. (Recent developments include mechanical harvesting of tomatoes, oranges, grapes, nuts -- row crops like beans, potatoes, cotton, and corn have been mechanically harvested for years.) Agriculture is the most highly capital-intensive industry in America, requiring an average capital investment of well over $100,000 per farmer.

The "new" jobs which are developing have their basis in such fields as soils research, plant propagation and hybridization, harvest methods research, agricultural logistics, irrigation research, fertilizer and pesticide research, and hydroponics; and in the design, sale, and maintenance of agricultural equipment and machinery. Some of the jobs with these new emphases are already quite well known, and community colleges already have one-and two-year programs for agri-business and agriculture technology. Some additional job titles which may be well recognized by 1980 include: greenhouse agricultural technician, hydroponics "farm" manager, agricultural production methods analyst, plant propagation technician, agricultural chemical technician, veterinary technician, artificial insemination technician, and "fish farm" technician. Most of the new jobs will be at the mid-management and technician levels, and they will require training programs with strong inputs from science, engineering, economics, and business. Community colleges would be well advised to plan these new programs very carefully, preferably by working directly with advisory groups from the large corporate farms that are engaging in this "futurist" kind of planning. Most of the jobs will also initially be with these large firms.

Nothing in the above should be taken to mean that existing programs in crop production, agri-business, animal husbandry, etc., should be phased out. But they ought to be looked at, analyzed, and related in new ways to the changing demands of agricultural production and marketing.

Natural Resources Development

Although a great deal of concern exists at all levels about natural resource development, actual progress along these lines has been slow, except in the fields of forestry and more recently in fisheries conservation. The Bureau of Labor Statistics estimates that, in 1970, nearly 14,000 persons were employed as forestry aides, about one-third of them by the Federal Government, nearly one-half by private industry (lumber, logging and paper milling companies) and the remainder by State governments. An increase of nearly 50 percent to a total of over 20,000 is expected by 1980. This would mean an absolute increase of about 10,000 -- 7,000 for growth and 3,000 for retirements, deaths, and quits -- and suggests a need of 1,000 new entrants per year. Most of these should be trained in one- and two-year community college forestry technology programs.

No figures are available for the field of fisheries technology, but increasing attention is being paid to this natural resource. Both ocean and Great Lakes fisheries are involved, and there is also increasing interest in the commercial production of fresh water fish on "fish farms" in the southern (warm water) states. Asian countries have emphasized such small fish farms for many years, and they will probably increase in number in this country as the decade progresses and demands for protein sources increase.

At present, a number of community colleges and technical institutes have programs in "marine technology," "oceanographic technology," or something with a similar name. These usually involve some work in fisheries management and development.[7]

Another related field is wildlife management technology, which involves middle manpower workers -- technicians -- working with biologists and other scientists in the management of game preserves and the conservation of game animals and wildfowl. Only a few such programs exist at two-year levels, and the demand, for the foreseeable future, is not great. A community college thinking about initiating programs in either the fisheries or wildlife management area would be well advised to assess the situation very carefully before investing the resources necessary to start and operate the program.

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[7] See Buck, Dale R., "Marine Technology -- Diversity and Flexibility," New Directions for Community Colleges, Winter, 1973, Jossey-Bass Publishers, San Francisco.

2. Supply-Demand Factors in Business and Related Fields

The field of business enterprise, though it will generate hundreds of thousands of jobs annually, is not likely to generate a large number of new job titles. Persons in existing jobs will, however, have to acquire new knowledge and skills to cope with the increasing complexities of the business world. Professional and managerial personnel in business may face the same kind of manpower squeeze that confronted scientists and engineers two decades ago, and they will need greatly increased numbers of middle-level workers to gather data, staff communications systems, operate computers, prepare graphical analyses, write technical reports, run the offices, arrange credit, and staff financial institutions. Continuing the trend of the past 30 years, there will be more jobs for middle manpower workers in business than in any other field.

Office workers -- clerical occupations. The following is a short analysis of some trends predicted by Bureau of Labor Statistics analysts in the 1972-73 edition of the *Occupational Outlook Handbook*.

- Secretaries and Stenographers. Outlook very favorable. 150,000 new job openings annually, plus another 100,000 quits, retirements, and deaths. (Turnover is high in this field.) Community college trained persons, if realistic competence is attained, should find ready employment. Competence level expected is: typing 60 WPM, no errors; shorthand 110 WPM, no errors. Knowledge of all other secretarial duties.

- Accountants and bookkeepers. Outlook fair. Steady but slow increase in job opportunities for the well-trained, competent community college graduate. Growth limited because of impact of office technology, but need for new workers is expected to "outpace the labor saving impact of office machines." Sixty thousand or more new job openings annually, but many of these (bookkeepers) are high-school graduate level.

- Business data programmers and data processers. Although the rate of growth of these occupations probably peaked in the late 1960's, the outlook is still reasonable good -- about 35,000 openings per year. However, it is worth emphasizing that the need now is for quality rather than quantity. The day when anybody who had put in a few hours in a "quickie" course on unit records equipment was immediately employable is over. Programs must be rigorous and produce competent graduates. Up to 10,000 new workers per year will be needed for the rest of the decade. Competence on "present generation" equipment and in currently used "languages" is essential.

- Office machine operators. Moderate increase through the 1970's. Automation making real impact here. The number of operators needed by any one business will probably decrease, but overall business growth will more than make up for that. Several thousand new workers per year is the forecast.

- Clerks and clerk typists. Favorable but not excellent prospects. About 60,000 openings per year. Automation (copying machines, automatic typewriters) is tending to displace some of the "junior typists" of former years. "Senior typists," capable of a high degree of accuracy and speed will be in demand. The outlook for clerks is just fair -- new business starts and their requirements are just about balancing out the reduction effect of automation and the new communications technology on employees in existing businesses. Most of these jobs are filled by high-school-trained persons, in any event.

Sales and Marketing Occupations

About five million workers were in this field as of 1972. They were about evenly divided between retail salesworkers (52 percent) and wholesale and "outside" salesmen (including real estate, insurance, securities, manufacturers' representatives, etc.). Most retail store clerks get their training either in high school or on the job. Community college merchandising majors are generally aiming at management positions (buyer, department manager, store manager). Outside salesmen or manufacturer's representatives, however, need either extensive sales training in industry or in colleges. The business management and marketing/salesmanship curriculums in community colleges are specifically planned to produce such salesmen. Special courses in real estate, insurance, or finance provide for preparation in these selling specialties.

The Occupational Outlook Handbook (plus other sources such as the United States Chamber of Commerce and National Industrial Conference Board publications) provides data for the following analyses of supply and demand.

- Auto parts salesmen and countermen. Moderate increases annually in the number of jobs. Many such workers get their training on the job, however, and are promoted from within. Perhaps 2,000 new openings per year. In the short run, a reasonably good bet for a limited number of community college programs, but an important caveat: watch out for the effects of the energy crisis on the manufacture, use, and maintenance of automobiles.

- Auto service advisers or service managers. These middle management workers greet the auto repair customer and interpret his analysis of his car's trouble. The adviser may drive the car and make an initial diagnosis of the malfunction. He then writes the repair order and asks the customer to sign it. He may give an estimate of cost for the job. Outlook -- moderate increase, perhaps 1,000 per year. However, many of these will be promotions from the mechanic work force rather than job openings for new, community college-trained workers. Perhaps the best approach here is to offer this training as a short-term evening program for mechanics already in service.

- Insurance agents and brokers. Outlook fair to good -- several thousand new openings yearly, plus many jobs to replace those who retire or change jobs. Highly specialized training required for success. The Life Underwriter Training Council (LUTC) and Chartered Life Underwriters (CLU) courses are almost essential for recognition in the field. Mature individuals are required for this kind of selling.

- Manufacturer's representatives (sales engineers, traveling salesmen). A highly competitive field, but outlook for new workers is favorable. There should be about 25,000 new openings per year. This is a good field for the community college marketing/management major or for technician majors in such areas as electronics, manufacturing processes, and air conditioning/refrigeration. Qualifications are a high level of technical and sales "know how" and an ambitious, competitive, congenial personality.

- Real estate salesmen and brokers. This is an "up-and-down" field. Right now, because of high interest rates and "tight" money, it is not moving at all. There is a net exodus from the field. Even when business is good, this has not proven to be a promising area for young (i.e., college age) community college graduates. Most two-year college real estate programs are aimed at the mature adult who takes the course work in the evening college.

- Retail salesworkers. Although the rate of increase will be slow, the absolute numbers will be great -- of the order of 130,000 each year. However, most of the new hires will be high school graduates or mature women returning to the labor force. There is not a large pool of jobs available for community college-trained personnel. Furthermore, the pay is low and the income does not provide any appreciable rate of return on the investment in college training. Community college programs should be aimed at training buyers, managers, and accountants, rather than sales clerks.

- Workers in credit and finance. Outlook good to excellent. Perhaps 60,000 or more new jobs will open up annually for beginning white collar workers in banks, savings and loan institutions, credit unions, and similar offices. Tellers and other counter personnel may not need any college training, but many workers in financial institutions do. Credit counselors, accounting and data processing personnel, office managers, investment advisers and many other such jobs constitute prime territory for community college educational programs; some for regular day college age students, others for continuing education programs for adults.

In concluding this section on business occupations, some emphasis should be given to the rapidly growing importance of international trade. More and more American-owned firms are opening branches abroad, and a new phenomenon, more and more foreign-owned firms are establishing both sales and manufacturing operations in the United States. Personnel with business training plus fluency in another language, or special training in tele-communications or special knowledge of the culture and economic needs of other peoples, will probably be in great demand. Community colleges should be ready to meet these needs.

3. Supply-Demand Factors in the Allied Health Field

More than 40 allied health technologies have been identified, ranging from audiometer operator to X-ray technician. These para-professional and technical workers are becoming an indispensable part of the health team in hospitals, clinics, and doctor's offices. The ratio of para-professionals to professionals in the entire medical and dental field is now estimated to be about 7:1, and the Surgeon General of the U.S. has said that, in his opinion, it ought to be 12:1. Forecasts made by the Surgeon General for the early 1970's indicated a need for about 100,000 new allied health workers per year just to take care of growing demand; not counting replacements necessitated by retirement, deaths, and moves to other job fields.[8]

New and emerging occupations include such job titles as: respiratory (inhalation therapy) technician, medical electronics technician, physician's assistant, operating room technician, community health aide, physical therapy technician, mental health aide, and many more. Some of these jobs are not yet fully accepted by hospitals and physicians, and some, though accepted, are still being evaluated since the boundary conditions of the job may be poorly defined.[9] Job titles with unquestioned acceptance include: associate degree nurse, medical laboratory technician, radiologic technician, dental assistant, psychiatric technician, licensed practical nurse, and many more.

Collegiate-technical programs to prepare persons for allied health jobs are diverse in concept, and somewhat experimental in nature. A relatively new movement is the "core-and-ladder" approach in community college allied health education. This concept assumes that there are certain knowledges, skills, and attitudes common to many of the allied health occupations, and there is an attempt to embody most of these learnings in a common core of at least one semester's duration. All students whose declared interest is in any allied health field take the core, and after its satisfactory completion they move into the specialty work of a single field. The other idea, that of the "ladder," challenges curriculum planners to provide an integrated series of steps in allied health career preparation, so that a student might "stop out" or step off the educational ladder into employment, and then return at a later date and move on up the ladder, without loss of time or repetition of course work, to some other level of para-professional or professional service. Several community colleges, among them Kellogg Community College of Battle Creek, Michigan, are organized on the core curriculum plan.[10]

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[8] Stewart, W.A., "Manpower for Better Health Services," Public Health Reports, May, 1966.

[9] See "Development and Growth of New Allied Health Fields," by Isreal Light; in Journal of the American Medical Association, October, 1969.

[10] Klopfenstein, Thomas D., "The Core is not the Part you Throw Away," New Directions for Community Colleges, Winter, 1973. Jossey-Bass Publications, San Francisco.

The following is a brief analysis of the supply and demand situation for the 1970's of the dozen or so allied health fields which seem best suited to community college curriculum development.

- Associate degree nurses. Outlook excellent. The Bureau of Labor Statistics estimates that total demand for registered nurses (baccalaureate, diploma, and associate degree) will reach one million by 1980, compared to the 800,000 of 1970. To this 200,000 net growth must be added another 200,000 for replacements. (Nursing is a high-turnover occupation.) Thus, total number of new entrants should be about 40,000 annually. As of 1970, about 40 percent of admissions to nurse training programs were in associate degree programs and this percentage will increase steadily.

  As of 1973, there were some signs that the nursing "shortage" was abating, perhaps due to the large numbers of former nurses who have returned to the profession after years of being inactive. Community colleges should watch these trends very carefully to avoid over-commitment in new programs. Local surveys are of importance too, since in some localities supply-demand factors are already in balance.

- Licensed practical nurses. Outlook, good. Although the demand for LPN's may not be as great in the years ahead as it has been for the past decade, job opportunities for newly trained workers are expected to be plentiful, provided the person can go where the jobs are. Some regions with many practical nurse schools may have an oversupply. Also, large numbers of former nurses are returning to jobs after years of family obligations.

  Many LPN's are trained in vocational schools, high schools, hospitals, and community health agencies. LPN programs are often aimed primarily at the mature woman who, after a decade or more as a homemaker, now wants a second career. Community colleges should carefully survey the local supply-demand situation before initiating or expanding an LPN program.

- Dental hygienists. From 16,000 dental hygienists employed in 1968, the field is expected to grow to about 34,000 by 1980. To the 18,000 for growth should be added an equal number to replace those who retire, quit, or die. (This is a high turnover occupational field.) Consequently, about 2,800 new entrants per year will be needed to bring supply and demand into balance. However, not all of these openings will be filled from community college programs since many dental hygienists are graduates of four-year bachelor's degree programs, and dental schools also train many diploma-level dental hygienists. In all states except Alabama, eligibility for a dental hygienist's license is limited to graduates of dental hygiene schools accredited by the Council on Dental Education of the American Dental Society. One dental hygiene program at a community college can serve a large area or region.

- Dental assistants. Outlook excellent. During the decade of the 1970's the number of employed dental assistants is expected to increase from 100,000 to more than 150,000. To this net growth of 50,000 another 50,000 must be trained to replace those who retire, quit, or die. (This too is a high-turnover occupation.) Consequently, a need of about 10,000 new entrants per year is projected. Of these, community colleges should probably attempt to provide 5,000 per year -- 2,000 from associate degree programs and 3,000 from certificate programs. It is said that a competent dental assistant "multiplies" a dentist by a factor of 1:7.

- Dental laboratory technicians. Outlook, very good through the 1970's. The training program is not yet stabilized; some persons enter the field through apprenticeship, others through voc-tech schools, and others through certificate and associate-degree programs in community colleges.

  About 35,000 were employed in 1970. This figure is expected to grow to 50,000 by 1980. And, since replacements will be needed for retirements, quits, and deaths, an annual need of about 2,500 new entrants is projected. As concerns community colleges, except in the most populous states, each program should serve a rather wide region. Capital costs of laboratory equipment are high.

- Surgical technicians (operating room). This relatively new allied health field is expected to grow quite rapidly. Associate degree graduates will be much sought after, but the current salaries for this occupation are not particularly attractive to the associate degree graduate. About 25,000 surgical technicians are currently employed and the need for new entrants is estimated to be about 2,000 per year. The "career salary" is not such that geographic mobility would be probable, so colleges should let local needs determine whether or not to start or expand a program.

- Inhalation therapists (respiratory technicians). Outlook excellent. A relatively new job specialty and one that is growing rapidly. Salaries are reported to range from $550 (beginning) to $1,000 per month, so expected income should allow for good recruitment into training programs. Community colleges should initiate programs only in regions with a good concentration of modern hospitals, since these workers are employed only in such settings. Local survey definitely indicated.

- Optometric assistants. Slow but steady growth. Only a few programs in each state needed. Perhaps not more than 500 new openings per year. Survey local and regional needs carefully.

- Physical therapy assistants. Outlook excellent, especially for two-year associate degree graduates. Pay scales are not very good however, so recruitment of students may be a problem. In 1970, about 10,000 licensed physical therapy assistants were employed in the United States. Needed new entrants for both growth and replacement are projected at some 2,000 per year. A good program for community colleges with large hospital complexes nearby.

- Medical laboratory technicians. The technician in this field generally has some college training, and many community colleges have programs. The technologist is a four-year degree person. The certified laboratory assistant has completed a one-year certificate program, either in a voc-tech school or in on-the-job training.

  Outlook is very good for the med lab tech, according to BLS. But watch the effects of automation on the medical laboratory, and also the impact of increasing numbers of four-year graduates and CLA (certified laboratory assistants) personnel.

- Radiologic technicians (technologists). Outlook excellent, but the training pattern is mixed. Many technologists are graduates of four-year programs. There is a generalized feeling that at least three years is required for a good program. Junior colleges that offer the program usually work on a three-year schedule, with the student qualifying for both certification and the associate degree. Much of the training, even in junior college-operated programs, must be in the hospital. About 80,000 were employed in 1970, and a need for about 10,000 new entrants annually is projected. A local survey should precede any serious planning to initiate a new program.

Some guidelines to observe in planning for allied health occupation programs follow.

1. Community colleges should put major emphasis on the associate degree para-professional/semi-professional/technician level. Voc-tech schools and high school programs (free tuition) will provide serious competition in such fields as LPN, hospital aide, etc.

2. Do not neglect adults in the community as probable recruits for health occupations programs.

3. Always conduct a local survey to determine local supply-demand factors.

4. Be sure of the full cooperation of hospitals, clinics, doctors, and dentists.

5. Keep standards of quality high -- consistent with the requirements for certification and practice. And, standards of admission should be realistic. These programs are extremely expensive ($1,500 to $3,000 per FTE) and the practice of "open door" admissions with high attrition rates should not be condoned. Provide a "vestibule" program or a first semester "core" as a get-ready program.

4. Supply-Demand Factors in the Engineering/Science/Industry Field.

These programs were the "meat and potatoes" of junior college occupational education from about 1950 to 1969. When aerospace, defense, and research and development cutbacks were made in the late 1960's there was an immediate effect on job opportunities, and very soon thereafter on enrollments in technical education programs at both baccalaureate and associate-degree levels. When jobs tighten up for scientists and engineers, a pinch can be expected on engineering and science technicians. However, during the last five years of "bad times" for science-engineering professionals, associate degree technicians have not encountered serious unemployment. As a matter of fact, they have fared better than their colleagues with baccalaureate and advanced degrees.

A factor which has contributed to decreasing enrollments in technical programs for the past few years has been the swing away from "material things," the anti-technology syndrome among youth referred to previously. Although community college total enrollments went up markedly during the period 1968-72, programs in the science-engineering and industrial technologies were lucky to hold their own and, indeed, in many instances suffered decreases in enrollment. Low student utilization rates for laboratories and shops, particularly in the machine and manufacturing technologies, have been a common occurrence in recent years at many community colleges and technical institutes.

However, in 1973 it appears that we now are turning the corner. There is a wave of young adults who, having found that fasting and the contemplative life are indeed associated, are returning to community colleges for technical career training. And the present generation of new high-school graduates, too, seems more inclined to become "economic men" than their predecessors of the 1960's. There is a greater interest in craftsmanship, in making things with one's own hands (helped by a machine), and a conviction that building things makes more sense than tearing things down.

There are new urgencies too, which will require the all-out effort of scientifically and industrially-minded people across a broad front. The energy crisis, housing, transportation, environmental improvement, health care needs, national defense -- all these and more demand a concerted national effort for solution. "Awareness" courses, student strikes, "teach-ins," and talking about the problems didn't move them toward solution. The talking phase may now be over, and the action phase shows signs of beginning. It is becoming clear that no matter how vehemently technology is blamed for society's ills we are going to have to turn to technology to solve them. And it begins to look like the youth of the 1970's are ready to get about the task.

The trend is now upward in nearly all science/engineering/industry-based technologies, and it is probable that this situation will hold throughout the decade. However, community college curriculum planners must be very careful to invoke rolling adjustments in their programs to accommodate to the rapid changes which are immediately ahead of us. In the words of the atomic scientists we have to "think some unthinkable thoughts;" for example:

1. Is the reciprocating internal combustion engine on the way out?
2. Are we going to have to re-convert to coal? How will the coal be processed?
3. Can we get a significant portion of our energy needs from the sun?
4. How soon can we have safe and commercially feasible thermonuclear fusion?
5. If we burn "dirty" coal and use "dirty" nuclear fission, what about the environment?
6. Can we really tap the furnaces within the earth itself -- geothermal energy?
7. Will America's famous geographic mobility be drastically reduced? What effects would this have on commuter colleges?
8. Will modern data systems and communications systems allow us to work without "going to work?"
9. If we can (through geothermal, or nuclear, or coal-fired energy) replace oil and gasoline with electrical energy, will every house and commercial establishment and factory in the United States have to be re-wired?
10. Is the day of American production superiority over? If so, why? And what can be done about it?
11. How severe will the competition be from four-year colleges and area voc-tech schools?
12. Are we on the verge of the "no-growth society?" If so, what will this kind of stability mean for technician demand and supply?
13. What are the full implications of the "post-secondary education" thrust, for community colleges? How much of a threat to local control are the stipulations and organizational plans mandated by EA-72? Will community college career education be governed by the K-12 vocational education establishment? Will community colleges be "finessed out of the game" by K-12 voc-ed schools, private schools, and four-year colleges?

These are some of the real issues community college educators must come to grips with, and such problems will begin soon to influence planning for the technician training programs of the mid- and late-1970's. Since the word "technician" means many things to many people, it is necessary to clarify terms here. This report distinguishes between science/engineering technicians on the one hand, and industrial (highly-skilled) technicians on the other.

Science/engineering technicians are those persons with most, if not all, of the following attributes:

1. Holder of an associate degree from a community junior college or technical institute;
2. Completion of a two-year organized educational program at a collegiate-technical level of rigor, with a strong math-science-engineering base;
3. Works in close association with or under the immediate supervision of professionals, on jobs which relate to design, research and development, planning, analysis, or interpretation;
4. May belong to the national association for engineering technicians, and more often than not is in the salaried or management group, rather than a member of an organized labor union.

Industrial (highly-skilled) technicians generally exhibit these characteristics:

1. Work at jobs which relate to repetitive testing, repair, or maintenance of equipment or systems, rather than design and development;
2. May be a graduate of an associate degree program, but more often the post-secondary educational background is one year or less and a certificate of some kind is awarded. (Generally the training program is devoid of, or weak in, theoretical and general education components.);
3. May reach technician status by "working up" on the job, with no formal post-secondary training at all;
4. May be called a "technician" (just because the word is a popular one) when, in fact, he is a craftsman or mechanic (as in "automotive service technician," "appliance repair technician"); and
5. Frequently belongs to the collective bargaining labor organization unit.

To be sure, it is sometimes difficult to distinguish between these two levels or kinds of technicians, but the two classifications will be used in the following analyses:

1. Science/engineering technicians

This was one of the fastest growing segments of the labor force in the 1950's and 1960's. From 1950-68, the rate of growth averaged 7 percent annually, as against a growth rate for the employed civilian labor force as a whole of about 1.5 percent annually.[11] By 1970, there were about 980,000 of these technicians at work in the United States assisting or working in cooperation with 450,000 scientists and 1,200,000 engineers. The ratio of technicians to scientists/engineers was (in 1970) about 2:3. (The much heralded "needed" ratio of 3 or 4 technicians to every engineer, which was frequently proposed in the mid-sixties, never was reached, and it obviously was not needed.)

From 1968 on, however, the pace of demand slackened, and as mentioned above there has not been a serious shortage of technicians for the past several years; but neither has there been an oversupply. As of late fall it appeared that the demand for technicians would accelerate over the rest of this decade for the following reasons:

1. Engineering graduates (first professional degree) will decrease from nearly 45,000 annually in 1970 to a bottoming out of only about 29,000 in 1975-76.[12] This estimate is based on students already enrolled, so it is a fairly "hard" projection. But, all indications are that demand for engineers is rising rapidly and it may reach urgent proportions at the very point in time (1976) when the number of engineering graduates is the lowest in 20 years.[13] Science graduates will be relatively few in numbers in the mid- 1970's also. Consequently, private industry and government both will resort to the employment of well-qualified technicians to back-stop and maximize the output of scientists and engineers.

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[11] The National Industrial Conference Board. The Technical Manpower Shortage: How Acute? The Conference Board, Inc., New York, 1969, p. 12.

[12] Estimate of the Engineering Manpower Commission, in Business Week, November 4, 1972.

[13] Jerry S. Dobrovolny, "Engineering Technology Education in the 1970's," New Directions for Community Colleges, Winter 1973, Jossey-Bass Publishers, San Francisco.

2. The urgent national problems facing the United States referred to above -- the energy crisis, improvement of the environment, further exploration of space, development of mass transportation, better health care, and national defense -- all will require the combined efforts of scientists, engineers, and technicians.

The overall employment outlook for new engineering/science technicians is expected to be very good through the 1970's, according to the Occupational Outlook Handbook. It is emphasized that graduates of two-year collegiate-technical programs will have the best job prospects. Salaries are generally very good for associate-degree technicians (beginning $8,000; experienced $13,000), and opportunities for women are excellent. The following general categories are worth separate comment:

- Aerospace technicians. Demand depends on aerospace and national defense commitments. Most jobs are either with government agencies or depend on government contracts. As a specialty, this is one to be cautious about. Starting new programs not advisable unless local or regional demand is assured.

- Air-conditioning, heating, refrigeration technicians. Would be a heavy demand field were it not for the possibility of an energy crisis which would restrict electricity and natural gas for refrigerated cooling. However, if a massive shift from gas/oil heating to coal or electricity is imminent, then thousands of new technicians will be needed (and in-service training for those already employed) who are well trained and competent in the technology of coal utilization.

- Chemical technicians. Demand will be steady but not critical. Tendency in this industry is to put graduate (baccalaureate) chemists to work at technician-level jobs for a year or two; and to up-grade skilled workers in the industry to technician status. If coal-conversion and water- and air-pollution programs get massive funding, prospects for chemical technicians would be greatly enhanced. Costs of pilot plant and specialized laboratories, coupled with low enrollments, has militated against the success of community college programs in this field. Caution is advised on this one.

- Civil engineering technicians. Prospects are fair to good. Graduate engineers no longer do much field work. Surveying and layouts of structures in the field are now mostly done by technicians. If mass transit, public housing, large scale environmental improvement projects, etc. really take off, the prospects here will be excellent.

- Electronics (electrical) technicians. Prospects excellent, even with no exotic new developments. Nearly all industries -- private and public sectors -- need competent electronic and electrical technicians. Added to thousands of job opportunities in existing fields will be thousands more as we face up to the manpower demands of the energy problem, the environmental improvement problem, and the maintenance of an adequate national defense.

- Mechanical technicians. Prospects good to excellent. American manufacturing is going to have to re-tool and re-organize if it is to remain competitive on the world scene. The scientific-engineering-technician team is the key to success in that effort. Thousands of new entrants to this field will be needed annually.

- Drafting technicians. Prospects good for well-trained associate degree graduates. This is an excellent field for women technicians. Everything that is manufactured, or even "dreamed up" has to be put over the drawing board. It appears that the claims of a few years ago that computers and automated equipment would soon put the draftsman out of business were just that: claims, either without much substance, or years ahead of their time. At least 15,000 new draftsmen per year will be needed at associate degree levels.

The listings above represent only a few of the many science-engineering-technician job titles. It will be noted that none of the exotic specialties has been dealt with (laser-optics technician, themonuclear fusion technician, biomedical electronics technician, geothermal technician, electronic computer technician, etc.), since (1) these are limited-demand fields, necessitating highly specialized training which cannot ordinarily be given in college laboratories, and (2) the numbers of personnel needed in such narrow specialties would be a matter for purely local determination. Also there is the very real question, referred to above, as to whether the "horizontal," goal-oriented, approach to curriculum is as good as the "vertical," discipline-oriented (cluster) approach.

For the field as a whole, the expectation is that there will be need for about 85,000 new science-engineering technicians per year until 1980.[14]

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[14] U.S. Department of Labor. College Educated Workers, 1968-80. Bulletin 1676, BLS. Washington, D.C., 1970.

If massive funding for the national needs and emergencies discussed above should be provided, this figure could easily jump to over 100,000 per year.

2. Industrial (highly-skilled) technicians.

The need for technicians at this level is directly related to the level of manufacturing activity, especially in the durable goods industries. The National Industrial Conference Board estimates that industrial production will increase at an annual rate of about 5.1 percent on through the mid-1970's.[15] (It should be noted, however, that the Board's projection did not contemplate either an environmental nor an energy problem.) If we assume that the 5.1 percent growth rate will hold, and add to that another 5 percent for replacements due to retirements, deaths, and quits, a 10 percent annual increase is indicated.

- Machine tool technicians. Prospects only fair -- slower growth than most technician fields. Unit cost of training very high; capital investment exceptionally high. Careful local surveys advised before decision to offer a program is made.

- Industrial management technicians - foremen. Prospects good, but in-plant training essential. Usually promoted from within. Successful programs provide management and other specialized knowledge and skills to persons already employed.

- Instrument repair technicians. Prospects good as instrumentation of industrial processes moves on apace. Again, combine theory courses at college with in-plant training.

- Appliance repair technicians. Excellent job prospects for competent people who are willing to work carefully and efficiently. Income is good in most locations. Colleges can give most of the training in their own labs and shops if funds are available to keep the equipment and tools up to date. Work with local advisory committees.

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[15] Economic Potentials of the United States in the Next Decade; National Industrial Conference Board, Inc. New York, 1965, p. 21.

- Auto service technicians (auto mechanics). Prospects excellent, competent people needed in almost all localities. Keep a rolling adjustment plan in effect, however. Will the Wankel engine (or other new type) take over? Electric automobiles? Drastically reduced numbers of automobiles?

- Small-engine repair technicians. Same prospects as for auto service technicians but the apparent oil and gasoline shortage should be kept in mind.

- Radio-TV technicians. Mostly TV now and mostly color. Good prospects for highly competent workers. Programs must insist on high standards of attainment.

- Detail draftsmen. Reasonably good prospects for those who are neat and fast detail draftsmen. These are not design-level people, but they must be good on the board.

- Mining technicians (mechanics). Prospects slow now, but this may be a critical job field if we have to shift a major share of the energy burden back to coal.

- Construction technicians (skilled craftsmen and estimators). Prospects excellent. There are never enough really competent journeymen and leading men in the building industry. However, the training program must be a cooperative venture, comprised of theory and general education in the college, and practical experience on the job.

1. Supply-Demand Factors in the Public (Human) Services Field.

The service-producing industries provide jobs for well over half of the nation's labor force. In 1970, about 47 million workers were on the payrolls of service-producing industries, and only about 27 million were making a living from the goods-producing industries.

However, we are not concerned here with all of the service-producing industries -- only with those jobs which fall into the realm of public services, such as the protective service occupations (law enforcement, fire service, etc.), and those social services rendered to people by various services, public health services, and the like.

Previously, reference was made to the tendency for many contemporary students to prefer careers that are "people-oriented" rather than "production-oriented." There is, of course, considerable precedent for this preference among college youth, since college has traditionally been the route to a professional career, and most of the recognized professions are people- or service-oriented. However, we must make a distinction between the kind of services that people seek and pay for directly (legal, medical, dental services; entertainment; architectural services; food, tailoring, and laundering services; and the like) and the kind of services which are provided to people by government, whether or not the individual wants them or needs them, which necessitate levying taxes on all persons, irrespective of the rate of use of the services (police and fire protection, public schools, social services, public health services, welfare programs, and the like). The first kind of services provide basic jobs and are a part of the market economy of the nation. The second kind provide service-oriented but non-wealth producing jobs, and their provision is a cost (tax) on the economy. Consequently, there is a finite limit (just where the limit is has not yet been determined) to the number of people-oriented jobs of the second kind which society can provide, and it is almost a certainty that such jobs will not be provided in numbers which will be in balance with the hundreds of thousands of students today whose stated purpose in college is to prepare for a career in a people-oriented field. (Refer again to Chart III, page 115.)

It was also pointed out previously that thousands of baccalaureate degree graduates in people-oriented fields (humanities, sociology, social science, teaching, and behavioral science) are experiencing great difficulty in finding employment. It seems a safe assumption then, that associate-degree graduates, or one-year certificate trainees in human services fields are going to have extreme difficulty in getting a job in a buyer's market which is already flooded with baccalaureate-degree graduates.

Consequently, it is unrealistic at this time (1973) to suggest that existing community college programs in the human services be significantly expanded, and that new programs be initiated. Nothing in the foreseeable future would support such a decision. Tax rates for every conceivable public purpose are in all-time highs, and tax revolts are not uncommon. Despite the antipathy of many youth and students toward production, it is only through a vigorous productive economy that a society can afford to provide a broad spectrum of human services. Energy crises and the specter of food and material goods shortages evident this year should serve notice to all that we have reached and perhaps passed the balance point between goods production versus services production in the United

States. It may be time for college counselors to point out these basic economic "facts of life" to students, and perhaps re-direct the career aspiration of many youth into a production occupation which (1) will contribute a credit rather than a debit to the nation's economy, and (2) will prepare them in fields where jobs will be available.

The kinds of human services jobs at middle manpower levels to which associate degree graduates can aspire include (but are by no means limited to) the following job titles:

Recreation leader
Mental health technician
Child care center workers
Teacher aide
Urban services technician
Social worker aide
Media technician
Law enforcement officer
Fire service worker
Public housing manager
Environmental health assistant
Sanitation inspector
Library aide
Community center worker

Some leaders in community college human services education propose a "core and ladder" approach to curriculum building including a number of areas of instruction that have been overlooked in the traditional curriculum. The usual length of the core is one semester, and ordinarily it is not applied to law enforcement and fire service programs.

Despite the note of caution about supply-demand concerns developed above, community colleges certainly should take a good look at the potential need for middle manpower workers in public services fields in their own regions. The use of advisory committees is strongly recommended. Hard data on funded personnel lines in the budgets of the various social agencies should be sought, not just the hopeful opinions on "need," as voiced by those whose professional interest is in the social services. It is also recommended that a regional approach be adopted, since it is unlikely that the demand for employees will be so great as to require several such programs at each and every community college in the state.

Prospects for selected occupations. Keeping in mind the comments above, which apply in a general way to all the jobs in this genre, the outlook for selected occupations is given below:

- Law enforcement officers (police). In 1970, municipal police forces alone, 332,000 persons were employed, and the annual openings were about 17,000. Adding 40,000 state troopers (highway patrol), and thousands of county sheriffs, deputies, town marshals, and constables makes a sizable occupational group. The current crackdown on crime, bolstered by federal and state funding, has resulted in considerable enlargement of police and sheriff's forces in the past three years. Total annual new hires, for growth and replacements, are now estimated to be in the range 25,000 - 35,000 annually.

Educational requirements seem to run in cycles. For a decade or more there was educational up-grading, a few cities even requiring a baccalaureate degree for entry patrolmen, and many requiring two years of college or equivalent. During the past year, however, several large cities have reversed this trend in an attempt to get more Blacks on the police force.

Both in-service and pre-service law enforcement programs have been highly successful in community colleges. Like the associate-degree nurse program, it is a "natural" for community colleges. Initiating or expanding a program should be undertaken only after thorough study of the entire situation with the aid of a competent advisory committee.

- Fire service workers (firefighters). In 1970, there were 180,000 firefighters in full-time career employment on the fire departments of municipalities. In addition, many thousands of part-time paid "call men" served small town and rural fire departments. New hires averaged about 13,000 annually. Growth in fire service employment is steady but not as spectacular as the expansion of law enforcement staffs. Also, from the viewpoint of community college educational programs there has been very little acceptance of college-level pre-service training programs. Most of the fire service training given by community colleges is on an in-service basis, complementing (with theory and general education) the hands-on, practical training conducted by the department itself. Again, local conditions and needs govern. Work through an advisory committee.

- Teacher aides. No national need at present. Local needs may exist in some regions and these should be determined from local surveys. With 100,000 or more fully prepared and properly certificated teachers seeking employment, it is unlikely that the demand for teacher aides will increase in the foreseeable future.

- Media (LLRC) technicians. Prospects here are good to excellent for well-trained workers. Must be able to operate and perform simple repairs on "hardware" Familiarity with projectors, sound systems, closed-circuit TV, tape decks, etc. is essential. Should be of a rigorous associate degree program. Experience in a learning lab is essential.

- Social worker aides. Prospects fair to good, especially for bi-lingual persons who can work with Mexican-Americans, Puerto Ricans, or American Indians. Opportunities are also good for competent Black workers assisting social workers in urban settings. There are no data-based projections available for the annual need for new hires. Local survey necessary in all cases.

- Child care center workers. Since the number of child care centers is increasing rapidly, job opportunities in this specialty are expected to be good to excellent. A two-year program in community colleges that actually operates a child development center is recommended. There are no reliable data on national need. Necessity for local survey.

- Sanitation inspectors. Slow but steady growth as municipalities and counties grow in population. Inspection of restaurants, public service facilities, water supplies, waste and sewage disposal facilities, etc. Rigorous training program essential. Details available from National Sanitation Foundation, Ann Arbor, Michigan. Not a large employment potential, and only one community college in a given region should offer the program.

- Recreation leaders. Prospects fair to good. Added to the traditional sources of employment (YM and YWCA's, city parks and recreation departments, hospitals and county agencies) are new agencies being formed for the "senior citizen." Employment opportunities are expected to increase steadily over the next several years. Best job prospects will be for associate degree graduates. Must enjoy working with children and "oldsters."

Summary

1. Middle manpower occupations of all kinds and at several levels are now becoming more and more open to women. In the future, it should be just as normal to see many women enrollees in electronics and appliance repair and business management classes as it is to see them in nursing and secretarial classes.

2. Continuing education, or lifelong learning is currently in another cycle of emphasis. Community colleges will, of course, respond readily to the needs of adults for occupational re-training or job-upgrading; and to the reasonable desires of mature adults and "senior citizens" for intellectual and cultural improvement. However, there is a rather fine line between educational and cultural improvement on the one hand and the "basket-weaving," "fly-tying" kinds of activities that the adult education movement was guilty of a decade or two ago. Education can be loosely categorized into two kinds: (1) education as an economic or social good, which benefits the society and is therefore worth an investment by society; and (2) education as a consumer good, which largely benefits only the individual. This latter kind of education, though it may indeed be offered by community colleges, should be paid for by the consumers themselves.

3. Unless community colleges begin now to get serious about occupational education of high quality and realistic standards of attainment, the play will be taken away from them by area voc-tech schools, private schools, and four-year colleges. Community colleges should proceed at once to dissolve the "new social invention" image, and bring to focus in its place the image of educational instructions concerned about learning and teaching, and about excellence and high standards in the preparation of youth and adults for careers or for advanced study.

4. Futurism is fun, but the margin for error is great. The needs of today are perhaps better guides to community college curriculum development than "blue-skying" about the future; but an occassional look down the road to 1980 may enable this country to plan long-range manpower and educational policies more wisely. Build into the planning the rolling adjustments and the contingency options which sober reflection about the future suggests.

5. Knowledgeable observers of the present supply-demand situation might agree on most, if not all of the following summary statements about middle manpower:

   a. The critical shortage of scientific, engineering and industrial technicians has abated, and the current supply-demand situation appears to be pretty well balanced. (However, a shortage cycle may begin again by 1980.) Science-engineering technicians must be capable, competent, and well trained. The associate degree from rigorous science/engineering based two-year curriculums is the desired preparation. Community colleges wishing to contribute to this middle manpower need will have to select students for these programs rather carefully (these are not "open door" programs) and keep standards of attainment high.

      The annual potential for new entrants into the labor force at the industrial (highly-skilled) technician level is very large -- on the order of several hundred thousand. Most of these jobs, however, are influenced or controlled by organized labor, and in-plant or union-managed training programs are the rule rather than the exception. Community colleges must find ways to cooperate in the education and training of these workers, but control of the programs will probably remain with employers and labor unions. Competition from private schools and area voc-tech schools will be keen, and community colleges will have to be extremely practical and very flexible if they are to have much of a role in this kind of middle manpower training.

   b. Well-qualified secretaries and office workers are still in demand in nearly all regions of the nation. Despite a steady increase in mechanization of the business office, it is expected that employment opportunities for nearly all office workers will nevertheless rise appreciably during the 1970's.

   c. The "middle management" field in business is currently in a near-balance situation as regards workers in such fields as accounting, marketing, finance/insurance/real estate, advertising, and store management.

   d. Computer science, including data programming and data processing, has passed through its period of peak demand, and in some areas of the nation data-processing technicians (operators) are in oversupply for the time being.

   e. The health occupations continue to require increasing numbers of paraprofessionals and technicians. The allied health occupations field has become, during the 1970's, a major curriculum area for community colleges. With increasing concern about the health care needs of all people, with the spread of pre-paid health care plans, the growth of Medicare and other government-related programs, and the rapidly increasing scientific and technological input to health care, it seems probable that this will be a field where the demand for middle manpower workers will exceed the supply for some years to come.

f. The relatively new area of the human service occupations, though "experts" have been forecasting critical needs for several years, has not yet provided large numbers of middle manpower jobs. None of these occupations is in a situation of national demand, like nursing or secretarial training, or engineering technology. Local demands will be found here and there if careful surveys are conducted. Programs for these fields should be initiated only after a local survey demonstrates the need, and only on the recommendation of a representative lay advisory committee. If community colleges respond to student demand for people-oriented programs without a hard-nosed evaluation of employment opportunities, not only will millions of educational tax dollars be unwisely spent, but many thousands of associate degree graduates who "wanted to help people" will suddenly find that it is they who will have to be helped.

g. Agriculture and natural resources is a field with paradoxes. Mechanization in agriculture continues apace, and although production trends upwards every year, employment continues trending downward. The big push for environmental improvement and conservation of natural resources, though these areas represent potential employment for technicians in the future, has not yet resulted in a significant demand for middle manpower workers. There will be a small but significant demand for middle manpower workers in agriculture/natural resources fields, but community colleges should look at each cluster of occupations very cautiously before initiating new programs. It is essential to distinguish between "need" and "economic demand."

CHAPTER V

COMMUNITY COLLEGE EDUCATION IN MONTGOMERY COUNTY AND EDUCATIONAL OFFERINGS PROVIDED BY OTHER SELECTED AGENCIES

Part I - Community College Education

Introduction

Presented in this chapter is a statement of the legal base for programs and services to be provided by Maryland Community Colleges and a brief description of community college education in the state. Data are presented on Montgomery College to reveal a picture of past and present enrollments and of programs and services offered. Data are also presented on educational offerings by other selected agencies in Montgomery County.

1. Legal Status of Maryland Community Colleges

A community college in Maryland is defined legally as an institution of higher education, offering the equivalent of freshman and sophomore years of college work and at least one two-year program of post high school education and performing one or both of the following functions:

- Offering terminal, vocational, technical, and semi-professional programs; or
- Offering terminal nontechnical programs.[1]

Occupational programs prepare students for immediate job entry and upgrade job skills of students already employed in a specialized occupation. These programs are intended to help meet manpower requirements at two levels, namely,

- Middle management and technical levels in such fields as health services, engineering, public services, and business and commerce; and
- Artisan, trade,and service levels within each of these broad occupational fields.

Community colleges are authorized to grant associate degrees and certificates to students who successfully complete programs in the technical and mid-management fields. It is inconsistent with the increasing commitment of public community colleges to comprehensiveness of programs and services that little progress has been made in developing occupational programs at the artisan, trade, and service levels. While, as is shown below, some of these programs are available in some "down county" area high schools, similar opportunities are extremely limited for persons beyond high school age in educational settings consistent with their experience and maturity.

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[1] The Annotated code of the Public General Laws of Maryland 1957, 1972 Cummulative Supplement, Volume 7, Article 77A, Section 4, paragraph ([illegible]), p. 255.

The Maryland State Board for Community Colleges adopted a resolution that the Board, ". . . supports and offers encouragement to the colleges for continued development and expansion of community services programs as a significant function and responsibility of the Maryland Community Colleges."[2] A recent recommendation of the Maryland State Board for Community Colleges was that, ". . . legislation be enacted to include this function (community services) as a formal statutory responsibility of community colleges."[3]

2. Community College Education in Maryland

Sixteen community colleges are currently in operation within Maryland. Each is a two-year college established to meet the educational, economic, and cultural needs of its service area in particular and the State in general. Areas of study within specific programs lead to the Associate Degree or a Certificate at each community college and may be pursued by students during both day and evening hours on a full-time or part-time schedule of attendance at most institutions. A variety of short-term courses and community service programs designed to meet immediate educational-cultural needs of citizens are also available.

Areas of study identified as transfer are parallel to the first two years of those found in four-year colleges or universities. Those identified as occupational or career programs prepare students for immediate employment in the field to which they relate. Many areas of study in occupational or career programs contain courses which, although they are designed to prepare students for employment, are also acceptable for transfer credit at four-year institutions. Community Service courses range from two or three hours, one time on a single day, to courses which meet for three hours each week during an entire semester. The majority of the community college courses offered by community colleges are of six or more weeks duration and meet for a period of at least three hours per week.

Several community colleges have been granted specific responsibility for offering basic, general, and vocational education, and several other colleges have assumed partial responsibility for these adult education functions.

During the 1972-73 year, associate degree programs were offered in 115 areas of study by Maryland community colleges. Thirty certificate programs were offered plus a vast variety of non-credit community service programs of varying duration and type.[4]

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[2] Maryland State Board for Community Colleges, Resolution approved January 13, 1972.

[3] Statewide Master Plan for Community Colleges in Maryland, 1973-1983, p. 19.

[4] Maryland State Board for Community Colleges, Community Services, I (January, 1972), pp. 1-8; and Curricular Guide for Students and Counselors, 1972-1973, I (September, 1972), pp. 1-16.

Philosophy and Objectives of Montgomery College

Within the legal and regulatory framework established at the state level for Maryland Community Colleges, each college defines its mission. Institutional statements of philosophy and objectives tend to reflect the nature and characteristics of the area served. Since not two areas are identical in economic, sociological, or demographic composition, institutional statements would be expected to differ from one college to another.

1. Philosophy of Montgomery College[5]

The vitality of a democracy depends upon the continuing development of the capacities of all its citizens both for their self-realization and for the common good. The American public educational system is designed to provide the motivation and education to fulfill this ideal of democracy. Thus, education beyond the high school is a public responsibility, especially since a large portion of the population will benefit from it.

The public has assumed this responsibility by establishing and supporting Montgomery College. The function of the college is to provide comprehensive higher education by offering within a single institution diverse curriculums for technical, semi-professional careers, as well as programs for transfer to baccalaureate programs in other institutions.

In addition, the college offers community services through continuing education and cultural programs.

The philosophy of Montgomery College is expressed in the following generalizations that the college:

- Must strive for excellence in each of its different programs with the aim of educating each individual to the level of his highest potential;

- Has an obligation to keep its program varied in accordance with the changing educational needs and interests of the community;

- Provides a favorable learning climate to meet the needs of a diverse student body by a close student-teacher relationship, by individualized instruction and, above all, by a faculty and administration devoted to teaching and to continued improvement in instructional methods;

- Believes that a sound guidance and counseling program, which helps students to achieve self-understanding and to make realistic educational plans, is an essential part of a community college program;

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[5] *Montgomery College Catalog*, 1973-74, pp. 2-3.

- Sponsors a variety of cultural, educational, and leisure activities outside the classroom to encourage the student to broaden his knowledge and appreciation of the arts, the sciences, the humanities, and the social issues of our time;
- Considers it to be a fundamental responsibility to provide a broad liberal education for all students enrolled in a curriculum so that they may increase their appreciation and understanding of the world of ideas, scientific inquiry, and human relations; and
- Although liberal in its admissions policy, will require of its students academic performance of high quality and rigorous intellectual discipline.

2. Objectives of Montgomery College

The primary aim of Montgomery College is to create an educational environment which opens up opportunities for each student to learn and to work in a community of scholars and to develop the following abilities and attitudes:

- To realistically appraise his goals, abilities, achievements, and behavior;
- To expand his knowledge, understanding, and appreciation of the world about him;
- To prepare for adult responsibilities as a citizen and a member of family and community groups;
- To practice social conduct based on ethical and spiritual values;
- To develop skills and basic intellectual qualities for further higher education, continuing education, and occupational proficiency;
- To develop aesthetic appreciation of literature, music, the visual arts and his cultural heritage;
- To develop social responsibilities and leadership characteristics and to learn how to participate in a democratic society;
- To learn to judge men and issues critically and to base decisions and conduct on such judgment; and

- To understand conditions for healthful and effective living and to develop social poise and mature conduct.

Physical Description of Montgomery College

Montgomery College has two campuses, one located in Takoma Park and the other in Rockville.

The core of the Takoma Park campus occupies the entire block surrounded by Takoma Avenue, New York Avenue, and Fenton Street. Since 1950, it has occupied this site, formerly the campus, of the Bliss Electrical School. There are seven buildings on this campus, but action to redevelop this campus is underway. The Rockville campus is located west of Route 355 between Mannakee Street and North Campus Drive on the western edge of Rockville. There are 12 fully air-conditioned buildings on the Rockville campus. The College Administrative Center which houses offices of the central administrative and planning staff of the College is located on the Rockville campus.

Students are entirely responsible for their own living accommodations. Student housing is neither provided nor approved by the College. Cafeteria service is available to all students on both campuses five days a week during the day and early evening hours.

Total Enrollments at Montgomery College

The number of students enrolled and the number of graduates have both been increasing at Montgomery College over the past decade.

Presented in Table 20 are head count and full-time equivalent enrollments for Montgomery College during the fall semester for each of the past five years. Shown also are the percentages of increase in both head count and full-time equivalent enrollments. The percent change over the past three years has been less for full-time equivalent enrollments than for head count enrollments, thus reflecting the trend for increased proportions of the total head count enrollment to be part-time students. One may also note that the rate of enrollment growth has been declining. This trend is consistent with national and state-wide enrollment patterns.

The primary purpose of this section is to present data on the status of enrollments for the last full academic year, 1972-73. Shown in Table 21 are the number of persons enrolled at each campus location, by academic classification, and status of attendance (full-time or part-time). One can see, for example, that in the 1972 fall semester there were 3,299 persons enrolled as freshmen full-time on the Rockville campus, 835 freshmen were part-time students, and the total of all freshmen was 4,134 persons. Other data are to be read likewise. From observation

TABLE 20

TOTAL NUMBER OF FALL HEAD COUNT ENROLLMENTS, SEMESTER HOURS CARRIED BY STUDENTS, AND FULL-TIME EQUIVALENTS ENROLLMENTS

Year (Fall)	Head Count Students		Number of Semester Hours	Full-Time Equivalent*	
	Number	Percent Increase		Number	Percent Increase
1969	7,319		79,159	5,277	
1970	8,484	15.9	92,054	6,137	16.3
1971	9,535	12.4	101,817	6,788	10.6
1972	10,645	11.6	112,115	7,474	10.1
1973	11,708	10.0	119,877	7,992	6.9

*Full-time equivalent enrollments (FTE) are computed by dividing the total number of semester hours enrolled in by all full-time and part-time students by 15.

Source: Office of Institutional Research, Montgomery College, Special Report, August, 1969 and OIR-2-3, October 1973.

of the data one can ascertain that, in general: (1) total spring head count enrollments were less than for the fall, (2) enrollments at the Takoma Park campus were less than at Rockville, and (3) spring semester full-time head count enrollments decreased while part-time enrollments increased over fall head count enrollments.

From data shown in Table 21, one can determine that during the 1972-73 academic year, about three-fourths (76.2 percent) of all freshmen were enrolled on the Rockville campus, 23.6 percent were at Takoma Park and 0.2 percent were enrolled off campus. Of all sophomores, 70 percent were enrolled at the Rockville campus, and 30 percent were enrolled at the Takoma Park campus. Nearly three-fourths (74.7 percent) of the unclassified students were enrolled on the Rockville campus, 16.9 percent were enrolled at Takoma Park, and 8.4 percent were enrolled in off-campus locations. Of the total college enrollment, approximately 53 percent was full-time and 47 percent was part-time. A larger percentage of spring enrollments were part-time, compared to the fall.

Trends indicated above coincide with the expected trend among Maryland community colleges to 1983. Total full-time equivalent enrollments have been projected to increase in Maryland by 65 percent in 1983 over those in 1973. The expected increase in numbers of students enrolled part-time (99 percent) is greater than the expected increase in numbers of students enrolled full-time (79.2 percent).[6]

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[6] Maryland State Board for Community Colleges, State-wide Master Plan for Community Colleges in Maryland, 1973-1983, Annapolis: The Board, October, 1973, pp. 8-9.

TABLE 21

HEAD COUNT ENROLLMENTS FALL 1972 AND SPRING 1973 FOR MONTGOMERY COLLEGE

Location of Classes	Freshmen			Sophomore			Unclassified			Total Enrollment		
	Full Time	Part Time	Total	Full Time	Part Time	Total	Full Time	Part Time	Total	Full Time	Part Time	Tota
Rockville												
Fall '72	3299	835	4134	1172	619	1791	56	1924	1980	4527	3378	7905
Spring '73	2798	985	3783	1255	632	1887	52	1949	2001	4105	3566	7671
Takoma Park												
Fall '72	827	441	1268	424	360	784	21	439	460	1272	1240	2512
Spring '73	700	486	1186	438	342	780	14	426	440	1152	1254	2406
Off Campus												
Fall '72	--	8	8	--	5	5	--	215	215	--	228	228
Spring '73	--	11	11	--	7	7	--	233	233	--	251	251
Totals												
Fall '72	4126	1284	5410	1596	984	2580	77	2578	2655	5799	4846	10645
Spring '73	3498	1482	4980	1693	981	2674	66	2608	2674	5257	5071	10328

Sources: Office of Institutional Research, Montgomery College, OIR-7(R), OIR-7(TP) and OIR-7(OFF C), December 4, 1972 and OIR-20(R), OIR-20(TP) and OIR-20(OFF C), April 2, 1973.

TABLE 22

HEAD COUNT ENROLLMENT BY DAY AND EVENING AND OFF CAMPUS BY PERCENT

Campus Location	Percent of Total Enrollment				Total
	Day	Day/Evening	Evening	Off Campus	
Rockville					
1972	69	11	20	--	7,905
1971	68	12	20	--	6,828
1970	66	14	20	--	5,884
Takoma Park					
1972	63	19	18	--	2,512
1971	64	15	21	--	2,553
1970	63	15	22	--	2,474
Off Campus					
1972				100	228
1971				100	154
1970				100	126
Total College					
1972	66	13	19	2	10,645
1971	66	12	20	2	9,535
1970	64	14	21	1	8,484

Source: Office of Institutional Research, Montgomery College, OIR-29, April 23, 1973.

Another characteristic of the students being served is revealed by the percentages who attend classes in the daytime, in the evening, or who divide class attendance between the two time periods of the day. These data are shown in Table 22. The reader can see that, at Rockville, there was a gradual increase over the years 1970-1972, inclusive, in the percentage of students attending in the daytime. In the fall 1972, slightly over two-thirds (69 percent) of the students enrolled at Rockville attended during the day while at Takoma Park slightly under two-thirds (63 percent) attended during the day. As part-time enrollments increase, one might expect proportions of persons attending during the evening to increase.

Shown in Table 23 is the status of the fall 1972 head count enrollment by location of enrollment, full-time or part-time status and time of day attended. For example, one can see that of 4,527 students attending the Rockville campus full-time, 3,916 were attending during the day, 590 were attending both during the day and evening, and 15 were attending in the evening. Remaining data are to be interpreted likewise. It can be determined from the data presented that at Rockville, 46 percent of the part-time students attended during the day; while, at Takoma Park, 53 percent of the part-time students attended during the day. Likewise, it can be determined that, at Rockville, 86.5 percent of the full-time students attended during the day; but, at Takoma Park, 73.6 percent of the full-time students attended during the day. Thus, a higher proportion of students enrolled part-time at Rockville attend during the evening or have attendance split between day and evening than at Takoma Park, but a higher proportion of full-time students at Takoma Park than at Rockville attend on a split day/evening schedule or during the evening.

TABLE 23

STATUS OF FALL 1972 HEAD COUNT ENROLLMENT BY TIME OF DAY

Campus Location	Day	Day/Evening	Evening	Off Campus	Total
Rockville					
Fall-Time	3,916	590	15	0	4,527
Part-Time	1,552	284	1,542	0	3,378
Total	5,468	880	1,557	0	7,905
Takoma Park					
Full-Time	936	326	10	0	1,272
Part-Time	659	152	429	0	1,240
Total	1,595	478	439	0	2,512
Off Campus					
Full-Time	0	0	0	0	0
Part-Time	0	0	0	228	228
Total	0	0	0	228	228
Total					
Full-Time	4,852	922	25	0	5,799
Part-Time	2,211	436	1,971	228	4,846
Total	7,063	1,358	1,996	228	10,645

Another important characteristic of enrollment is age composition. These data shown in Table 24 reveal the extent to which a community college is attracting persons beyond the age of high school graduation and the extent to which persons of all ages are being served by the College. In the fall of 1971, approximately three-fourths of the enrollment was age 24 and under, about 16 percent were age 25-34 inclusive, and nearly 9 percent were over age 34. In the fall of 1972, 71 percent of the students were age 24 or less, slightly over 19 percent were age 25-34, and slightly over 9 percent were over age 34. Some public community colleges have had persons age 25 and over constitute as much as one third or more of the total head-count enrollment. Those institutions have typically been located in areas where the median educational level is less than for Montgomery County.

TABLE 24

TOTAL COLLEGE HEAD COUNT ENROLLMENT BY AGE GROUP

Age Group	Fall 1971		Fall 1972	
	Number	Percent	Number	Percent
16-19	3,890	40.8	3,986	37.4
20-24	3,283	34.4	3,603	33.8
25-29	1,054	11.0	1,421	13.3
30-34	469	4.9	644	6.1
35-39	297	3.1	366	3.4
40-44	222	2.3	264	2.5
45-49	179	1.9	191	1.8
50-54	86	.9	104	1.0
55-59	37	.4	41	.4
60 and over	18	.2	25	.2
Totals	9,535	99.9	10,645	99.9

Office of Institutional Research, Montgomery Community College, Report OIR-15a.

Approximately 26 percent of the Montgomery College students are married.[7] About 90 percent of the students during the 1972-1973 year were from Montgomery County, 3 percent were from Maryland outside the county, and about 7 percent were residents from elsewhere.[8] The major residential difference between the Rockville and Takoma Park campus enrollments is that about a tenth of the enrollment at the latter campus is non-resident, compared to about 6 percent at the former.

Source and Nature of New Enrollments

New head count college enrollments each fall 1966-1972, inclusive, are shown in Table 25 by campus location. Each year, except for 1971, the number of new academic credit enrollments has increased. The percentages of all student admission applications accepted which resulted in these enrollments were, respectively, 84, 84, 87, 86, 89, 79, and 76 percent. The total 1972 new enrollment of 5,268 was approximately 76 percent of 6,933 applications accepted. While the percentage of persons whose applications were accepted that actually enrolled increased each year from 1967 to 1970, the percentage declined in both 1971 and 1972.[9]

Shown in Table 25 are the percents of enrollment change at each campus location for the college. One can see that the change in academic credit new enrollment at Takoma Park has been negative since 1969. Increases in the fall 1972 at Rockville offset the decline at Takoma Park, so the total head-count of new students increased by 12 percent.

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[7] Office of Institutional Research, Montgomery College, OIR-30, May 1973.

[8] Ibid., OIR-9, January 1973, and OIR-18A, August 1973.

[9] Ibid., OIR-25, April 1973.

TABLE 25

COLLEGE FALL HEADCOUNT ACADEMIC CREDIT NEW ENROLLMENTS*

Year (Fall)	Location							
	Rockville		Takoma Park		Off Campus		Total	
	Number	Percent Change	Number	Percent Change	Number	Percent Change	Number	Percent Change
1966	--		--		--		2,408	
1967	--		--		--		2,810	17
1968	2,138		1,163		--		3,301	17
1969	3,003	40	1,290	11	--		4,293	30
1970	3,649	22	1,289	**	--		4,938	15
1971	3,446	-6	1,131	-13	124		4,691	-5
1972	4,151	20	956	-15	161	30	5,268	12

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*Does not include Community Services non-credit courses.

Source: Office of Institutional Research, Montgomery Community College, Report OIR 24 and OIR-27, April, 1973.

**Less than 1 percent change.

Data presented in Table 26 show the numbers of new students admitted and the numbers returning from the previous semester by location and enrollment status during the fall 1972 and spring 1973 semesters. For example, it can be seen that at Rockville in the fall 1972, 2,350 new full-time students were enrolled along with 2,177 who returned from the spring 1972 semester, making a total enrollment of 4,527 full-time students. The rest of the data are to be read in similar fashion.

From data presented in Table 26, it can be determined that at Rockville, 77.3 percent of the full-time and 63.6 percent of the part-time students, or a total of 71.5 percent of all students, enrolled during the fall semester returned for the spring. Likewise, it can be determined that at Takoma Park, 78.1 percent of the full-time and 69 percent of the part-time, or a total of 73.6 percent of all students, enrolled during the fall semester returned for the spring. For the total college, 28.4 percent of the students enrolled during the fall 1972 did not return for the spring 1973. At both campus locations, a higher percentage of full-time than part-time students returned to enroll in the spring 1973. This is a typical pattern.

TABLE 26

TOTAL COLLEGE HEADCOUNT ACADEMIC CREDIT ENROLLMENTS BY LOCATION*

Enrollment Status by Location	Classification of Student					
	New Admissions		Returning From Previous Semester		Total	
	Fall 1972	Spring 1973	Fall 1972	Spring 1973	Fall 1972	Spring 1973
Rockville						
Full-time	2,350	606	2,177	3,499	4,527	4,105
Part-time	1,801	1,417	1,577	2,149	3,378	3,566
Total	4,151	2,023	3,754	5,648	7,905	7,671
Takoma Park						
Full-time	455	159	817	993	1,272	1,152
Part-time	501	398	739	856	1,240	1,254
Total	956	557	1,556	1,849	2,512	2,406
Off Campus						
Full-time	0	0	0	0	0	0
Part-time	161	125	67	126	228	251
Total	161	125	67	126	228	251
Total College						
Full-time	2,805	765	2,994	4,492	5,799	5,257
Part-time	2,463	1,940	2,383	3,131	4,846	5,071
Total	5,268	2,705	5,377	7,623	10,645	10,328

*Does not include Community Services non-credit course enrollment.
Source: Office of Institutional Research, Montgomery Community College, Report OIR-28, March and April, 1973.

An important source of new college students is the spring graduating class of high schools. Shown in Table 26 are data showing the percent of spring graduates of public high schools in Montgomery County who enrolled the following fall semester at the College. One may note two things of significance: (1) the percentages attending the College vary considerably among the high schools, and (2) the total percentage declined in the fall of 1971 and 1972.

A slightly higher percentage of public high school graduates enter Montgomery College than appear to enroll during the fall following the spring high school graduation. This is indicated by data presented in Table 27 based upon a follow-up study of graduates. This difference may be due to the enrollment by some graduates later than the fall semester, who would have been included in the follow-up study and to the high school graduation and enrollment in the College by seniors during the year who were not among the spring graduates. Data in Table 27 show both the total percentages of graduates by high school continuing their education somewhere and the share which was attracted to Montgomery College. A considerable variance is evinced among the schools on both counts.

One may see that in the "down county" area, 72.6 percent of the public high school graduates continued their education and 21.3 percent enrolled at Montgomery College. In the remaining part of the county, 64.7 percent of the graduates continued their education somewhere, and 25.5 percent attended Montgomery College. Of the 994 graduates in the spring of 1972 from 14 private and parochial high schools in Montgomery County, 9 percent enrolled at Montgomery College during the fall 1972.[10]

If as shown in Table 28, 22.9 percent of all the 1972 graduates attended Montgomery College, one might wonder where the other 46.8 percent enrolled. Data presented in Table 29 indicate that 26 percent attended a college or university out-of-state, 14.7 percent attended the University of Maryland, and 4.2 percent attended either a state college, or another community college or private college in Maryland. Only 1.9 percent attended non-degree types of other schools.

The apparent decline in percent of public high school graduates attending Montgomery College raises the question as to whether this is in keeping with a trend for smaller percentages of graduates to continue their education. Data showing these trends appear in Table 30. Observation reveals that the percentage of boys continuing their schooling after high school graduation has declined each year since 1968. The percentage of girls continuing has remained fairly stable since 1966, with some relatively minor variations.

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[10] Montgomery County Public Schools, Department of Records, Reports and Training, Follow-up Study of 1972 High School Graduates, June 1973.

TABLE 27

PERCENT OF MONTGOMERY COUNTY PUBLIC HIGH SCHOOL GRADUATES ENROLLED AT MONTGOMERY COLLEGE THE FALL AFTER GRADUATION

High School Name	Fall 1970	Fall 1971	Fall 1972
Bethesda-Chevy Chase	23	17	17
Montgomery Blair	34	22	17
Winston Churchill	21	17	22
Damascus	24	17	16.5
Albert Einstein	32	20	21
Gaithersburg	28	25	20
Walter Johnson	27	23	17
John F. Kennedy	22	20	15
Zadok Magruder	--	--	38.5
Richard Montgomery	31	24	25
Northwood	31	25	25
Paint Branch	--	23	25
Robert E. Peary	31	24	21
Poolesville	14	10	7.5
Rockville	--	21	--
Sherwood	21	22	19
Springbrook	23	20	18
Wheaton*	33	25	11
Walt Whitman	17	12	11
Charles Woodward	25	22	21
Total	26	21	19

*Includes Evening School

Source: Office of Institutional Research, Montgomery College, Reports dated November 1970, December 1971, and November 1972.

TABLE 28

NUMBER AND PERCENT OF 1972 PUBLIC HIGH SCHOOL GRADUATES BY SCHOOL CONTINUING THEIR EDUCATION DURING 1972-73 AND CONTINUING AT MONTGOMERY COLLEGE

School Name	Total Continuing Number	Total Continuing Percent	Continuing at Montgomery College Number	Continuing at Montgomery College Percent
Einstein	330	62.1	127	23.9
Northwood	422	73.0	154	26.6
C.W. Woodward	251	74.0	78	23.0
Kennedy	292	73.9	72	18.2
Montgomery Blair	468	66.4	172	24.4
Walt Whitman	610	79.2	87	11.3
Walter Johnson	426	75.7	107	19.0
B-CC	525	84.4	119	19.1
Wheaton	428	59.2	206	28.5
Springbrook	496	79.4	127	20.3
Total Down County	4,248	72.4	1,249	21.3
Poolesville	24	30.0	5	6.3
R. Montgomery	309	57.1	145	26.8
Rockville High	207	64.1	90	27.9
Paint Branch High	157	66.8	63	26.8
Sherwood	122	53.0	43	18.7
Gaithersburg	353	60.0	142	24.1
Winston Churchill	546	82.7	178	27.0
Damascus	67	46.2	25	17.2
Peary	435	69.0	183	29.0
Total County Remaining	2,220	64.7	874	25.5
Grand County Total	6,468	69.7	2,123	22.9

Source: Montgomery County Public Schools, Department of Records, Reports and Training, Follow-up Study of 1972 High School Graduates, June, 1973, Pp. 22-58.

TABLE 29

NUMBER AND PERCENT OF MONTGOMERY COUNTY 1972 PUBLIC HIGH SCHOOL GRADUATES BY TYPE OF INSTITUTION ATTENDED IN 1972-73

Type of Institution	Male (N=4,430)		Female (N=4,853)		Total (N=9,283)	
	Number	Percent	Number	Percent	Number	Percent
Montgomery College	1,094	24.7	1,029	21.2	2,123	22.9
Other Maryland Com. Colleges	23	.5	23	.5	46	.5
Maryland University	660	14.9	702	14.5	1,362	14.7
Maryland State College	72	1.6	143	2.9	215	2.3
Maryland Private Inst.	41	.9	87	1.8	128	1.4
Out-of-State Col. or Univ.	1,130	25.5	1,283	26.4	2,413	26.0
Other Schools (Non-Degree)	66	1.5	115	2.4	181	1.9
Totals	3,086	69.7	3,382	69.7	6,468	69.7

Source: Montgomery County Public Schools, Department of Records, Reports and Training, Follow-up Study of 1972 High School Graduates, June, 1973, p.4.

TABLE 30

NUMBER OF MONTGOMERY COUNTY PUBLIC HIGH SCHOOL GRADUATES AND PERCENT CONTINUING THEIR EDUCATION DURING EACH OF TEN YEARS

Year	Total Number of Graduates	Percent Continuing Education		
		Boys	Girls	Total
1963	4,384	69.2	65.8	67.5
1964	5,398	67.4	64.1	65.7
1965	6,591	68.1	66.0	67.0
1966	6,644	71.9	68.9	70.4
1967	6,761	73.1	69.3	71.2
1968	7,142	76.1	70.5	73.2
1969	7,784	73.8*	70.1*	71.9*
1970	8,270	73.5	68.9	71.1
1971	8,636	72.5	72.3	72.5
1972	9,283	69.7	69.7	69.7
1973	9,221	#	#	#

Source: Montgomery County Public Schools, Department of Records, Reports and Training, Follow-up Study of 1972 High School Graduates, June, 1973, p. 60.

*Percents based on total graduates, excluding Walter Johnson High School.

#Not available.

Graduates of Montgomery College

The numbers of Montgomery College students graduated in recent years were as follows:

Year	Number Associate Degree	Number Certificate	Year	Number Associate Degree	Number Certificate
1966	219	--	1970	474	8
1967	235	--	1971	578	5
1968	316	4	1972	716	12
1969	425	5	1973	814	24

Data from a follow-up study of 1973 spring graduates of the college reveal a typical pattern in recent years of what happens to them. The findings indicated the following:

- Sixty-three percent planned to transfer to a college or university next fall.
- Thirty percent of the graduates planned to transfer to the University of Maryland next fall. Last year, 34 percent of the responding graduates planned to attend there.
- Thirty-seven percent planned to continue at a Maryland institution.
- Eleven percent expected to transfer to a university in the District of Columbia.
- Thirteen percent expected to attend institutions out of the metropolitan area.
- About 2 percent of the students had not yet decided where they will go to school next fall.
- Thirty-five percent planned to work full-time after receiving their A.A. degree. Most expected to work in the metropolitan area.
- Two percent had no definite plans for the immediate future.

Programs Offered by Montgomery College

To implement its philosophy and attain its objectives, Montgomery College has a variety of programs as follows:

- Curriculums preparing for upper-division degree programs at universities and other colleges;
- Technical and semi-professional programs for students who want to prepare for immediate employment;
- A pattern of similar course requirements in general education for all students enrolled in a curriculum;
- A variety of continuing education offerings for adults and college graduates, including both credit and non-credit courses, designed for employment, re-employment, and retraining in various professional and semi-professional fields;
- A broad and expanding series of forums, lectures, short courses, concerts, dramatic productions, art exhibits, athletic events, and other activities intended to balance the total instructional program; and
- Individual counseling services for all students to help them in planning their programs of study and in solving their transfer and other problems.

Among the special programs of the College are:

- A voluntary review program which is designed for weak or doubtful students to enable them to develop skills and basic intellectual qualities necessary to improve their chances of success in college;
- An early placement program in higher education for selected high school seniors who want to accelerate their college studies;
- An honors program for students of outstanding ability who respond to the challenge of participating in independent study, seminars, and interdisciplinary offerings; and
- An extensive summer program for students enrolled at the college, for undergraduates from other institutions, and for high school graduates who wish to begin their college studies.[11]

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[11] Montgomery College Catalog, 1973-1974, pp. 4-5.

In all of these programs and services, aimed at the development of the intellectual and cultural interests of its students, the college strives to be a vital educational-cultural center of the community. Each campus maintains a day and an evening schedule of classes, and the college operates on a semester basis during the fall and spring. In addition, a summer term is offered.

Montgomery College Curriculum Offerings and Enrollments

The curriculum of Montgomery College may be subdivided into categories by type of program according to primary purpose as: (1) transfer programs, (2) general education programs, (3) career programs, and (4) non-degree programs. Presented in Table 31 are the percentages of students at each campus location enrolled in each of the different categories of programs.[12]

TABLE 31

PERCENT OF ACADEMIC CREDIT ENROLLMENTS BY TYPE OF PROGRAM FOR EACH CAMPUS LOCATION

Type of Program	Rockville Percent	Takoma Park Percent	Off Campus Percent	Total College Percent
		A. Fall 1972		
Transfer	28	28	2	28
General Education	27	22	2	25
Career	20	32	2	22
Non-Degree	25	18	94	25
Total	100	100	100	100
		B. Spring 1973		
Transfer	28	26	2	27
General Education	26	24	3	25
Career	20	32	2	22
Non-Degree	26	18	93	26
Total	100	100	100	100

Source: Office of Institutional Research, Montgomery College, OIR-5, November, 1972 and OIR-22, March, 1973.

Observation of Table 31 reveals that most off-campus offerings are in non-degree programs, namely, post-graduate, early placement, and special. One may also note that a larger percentage of students at Takoma Park than at Rockville are enrolled in career programs, while the converse is the case in general education and non-degree programs. Approximately the same percentage on both campuses were enrolled in transfer programs.

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[12] For a listing of specific program offerings at each campus location and enrollments in each program see Appendix I, Table A.

Community Services Provided by Montgomery College

The Community Services Program of the college includes a wide variety of projects, activities, and services.

The major activities include the following: (a) non-credit or "credit free" short courses, both on- and off-campus; (b) credit courses conducted at off-campus locations; (c) conference assistance and special program development for community and college groups; (d) the support of various cultural activities of the community; (e) special course development for the community; (f) participation by the staff in cooperative activities for the benefit of the community; (g) contract and project supervision for Community Services, and coordination of Community Services grants; (h) Veterans Outreach; and (i) participation with the Community Services Advisory Committee in identifying goals.

1. Non-Credit or Credit Free Short Courses

Provision of educational experiences through non-credit courses is demonstrated by enrollments in such course activities. This aspect of the program is conducted at both campuses and at several other locations, based on the needs of specific groups or the space needs of the programs.

	1968-69	1969-70	1970-71	1971-72
Courses or Sections	33	38	122	180
Enrollments	1,003	1,461	3,966	6,849
Sites Used	1	4	7	13

The 1972-73 year commenced with a strong enrollment in the summer and fall of 3,526, approximately one-half of the expected total enrollment for the fiscal year. This program is being conducted at 17 sites, including both campuses. Among the more than 100 course and section offerings, the following suggest the diversity of the program:[13]

- Group Dynamics and Human Behavior
- Advanced Poetry Workshop
- Fashion Awareness
- Recorder - Introduction
- Law for the Layman
- Personality Assessment
- Conversational French, Spanish Hebrew and Chinese
- Casualty Insurance
- The American Woman: Past and Present
- Issues and Answers for Low Income Families
- Automotive Awareness
- Speed Reading
- Basic Key Punch

A continued expansion of the program is expected to occur as the college staff comes to understand more of the community needs and desires.

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[13] For a complete listing of community service non-credit course offerings during fall 1972 and spring 1973, see Appendix I, Table B.

Since the beginning of the Community Services course programming, real estate courses have been an important service. In recent months, while the number of real estate students is not proportionately as large as in previous years, the college's offerings have become more critical to the real estate profession than previously. Effective last year the Maryland Real Estate Commission began to recognize courses at colleges and universities, both credit and non-credit, as the only source of accredited instruction for the salesman's license. This has placed a larger demand on the colleges throughout the state. Approximately 560 persons enrolled in real estate courses in FY 1972,and an enrollment in excess of 700 is expected this year. To meet the expanded needs in Montgomery County,this offering was added to the college Saturday non-credit curriculum.

2. Credit - Extension Offerings

For several years before the opening of the Rockville campus in 1965, credit courses were taught at various non-campus locations throughout the county. After the campus opening, there was less need and demand for use of off-campus sites, with the exception of the National Bureau of Standards. In 1966, NBS was experiencing shortages of technical personnel and the college began to assist the agency by offering courses at that location. This service by the college has continued to the present, although their need today is different from previous needs.

In the fall 1970, off-campus credit courses were established at the Parklawn Building. This was followed immediately by the establishment of Saturday College in the spring 1971 at Good Counsel High School and, in the fall of 1971, courses at National Naval Medical Center. In the spring 1972 and fall of 1972, various other locations served as off-campus education sites. Recent credit course enrollments at these centers are shown below:

	FY69-70	FY70-71	FY71-72	FY72-73
Centers	NBS	NBS Good Counsel Parklawn	NBS Good Counsel Parklawn NNMC Bechtel	NBS Good Counsel Parklawn NNMC Carriage Hill Nursing Ft. Belvoir Great Oaks Green Acres Silver Spring Firehouse White Oak Library
Total Course Enrollment for Year	75	246	356	327 (Year to date)

The addition of the new Community Services Counselor (October 1972) with specific responsibility for off-campus credit course coordination and student counseling will permit a steady, continuous growth to occur. Routine counseling will now occur at regular intervals at each of the appropriate sites. As the program develops, analysis will be required of how off-campus student needs for a variety of services can be met. A subsidiary organizational entity within the Community Services operation, such as an Extension Division, may be required to meet these needs effectively.

3. Conference and Special Program Assistance for Community Groups

The Community Services staff each year becomes involved in a variety of non-course related events that are classed as conferences or special programs. Among these involvements are the Annual Vinton Lecture and Seminar, with the fourth such event to be held in the fall of 1972. Close cooperation between the Montgomery County Chamber of Commerce and the college staff has resulted in several useful community conferences, such as the Subdivision Process Conference in January 1972, and the Business and Industry Conference in April 1972. In the TESS area, the College staff was involved in Community Services Week during June 1972, which brought together several community agencies to articulate their program capabilities to the community and to foster cooperation. The staff also serves as resource assistants to the other professionals of the College in the development of their specific program potentials.

4. Cultural Activities

The Community Services work with the Academic Departments of Speech and Drama, Music and Art to appeal to the community at large for participation and attendance in cultural events. Non-credit programs which permitted community involvement were: the Summer Workshop, Summer Jazz Workshop, and most recently the art film series, Museum Without Walls. In the musical area, a Recorder Ensemble is being conducted throughout the fall term. The Montgomery Light Opera Association, which has been affiliated with the College since 1954, is also an agency with which the staff works and supports. Specific individual musical instruction, conducted by the Music Department faculty through the Applied Music Institute, is administered by the office.

5. Special Course Development

In addition to those course options normal to the operation of non-credit programs, several times a year various professional staff work with community groups to evolve programs new to the community or to the College. Two activities illustrate needs of this type to which the College responded.

Apprenticeship - In the fall of 1971, the College was approached by the National Capitol Association of Heating and Air Conditioning Engineering to conduct training in an apprenticeship program for men in this field. While many elements of the instructional program were developed previously, the Association felt that the College could assist in the development of specific program improvements. In its second year, the program met a growing need for technical training. Specific improvements in course content are taking place and it is expected that by the time the program has completed four years, it will be a sound and effective one. In the meantime, it is expected that other apprenticeship programs will be developed and conducted through the auspices of Community Services.

Aide Workshop - In 1972,after discussion with representatives of several county agencies, both government and non-government, a proposal for training aides employed by these agencies was evolved. The course content was designed to serve an amalgamation of the needs which the agencies felt their new employees had in the areas of: (a) general work responsibilities; (b) organization of the county government and other agencies; (c) work relationships with supervisors and co-workers; (d) demography of the county, etc.

Other groups with which training projects have been executed or are under development are: Southern Maryland Dental Association (dental assisting); Neighborhood Youth Corps (typing); and National Oceanographic and Atmospheric Administration (typing).

6. Cooperative Work of Staff

The Community Services staff also becomes involved with special agencies where it can contribute to the total community goals of that group, as well as the College. Some examples of staff cooperation are with the: TB Association; County Extension Service; League of Women Voters; County Women's Clubs; and Rockville Arts Council. In addition, the staff has participated in professional activities with Community Services staff of other Maryland Community Colleges.

7. Contracts

The College has been involved in two projects supported by grants from federal funds. One was the summer 1972 Community Tutorial Day Camp Project, a short-term activity developed largely by students at Montgomery College. The project included educational and recreational activities for 125-150 students from the Lincoln Park, David Scull,and Rockville Gardens areas of Rockville for an eight-week period. The students were involved in a daily series of subject presentations and discussions at their grade level. The staff, tutors,and administrators of the program were college and high school students, generally from the Rockville campus of the college and nearby high schools. Many agencies, including the county government, City of Rockville, Montgomery County Public Schools, a county library, etc., participated in the support of the project.

A second project was established under the provisions of Title I of the Higher Education Act of 1965. The College, with the involvement of the City of Rockville, had proposed a community development project for the Rockville Gardens Housing area. The project goal was to assist the people of this area to organize, to identify needs, and to request support from the College to meet the educational aspect of the community needs. The College was, throughout the project, to act as a broker to supply education and training as seemed appropriate. The project design permitted a low profile from the College and required the community organization within Rockville Gardens to make specific educational needs known so that responses would be arranged. The community's organization of the committee to articulate their needs has been sporadic. Though several conferences have been held, the specific educational needs have not yet been conveyed to the ollege. Continuing work with the community is expected to yield requests for specific activities that will be conducted in the future.

8. Veterans Outreach

During the year, the community and the College have benefited by the availability of a Veterans Outreach Coordinator who has been attempting to reach veterans returned to the area. The intent of this effort is to make sure that the returning veteran is alerted to his educational and job opportunities as soon as possible. When contacts are established, referrals are made for tests and more specific counseling needs. Where beneficial, the Outreach worker also makes coordinated follow-through contacts with various supporting agencies. At the close of the year, the Community Services Office expects to assume fiscal support of the position of Veterans Outreach Coordinator, now funded by the Emergency Employment Act of 1971. In the spring of 1972, under the direction of the Veterans Outreach Coordinator, a Veterans Job Fair was held. The Fair attracted approximately 200 people.

9. Other Activities

In addition to the basic activities of non-credit, short-term courses; extension credit programs; and special conferences, workshops, seminars and the like using College facilities an/or support, the past year's Community Services encompassed much more than during the 1972-1973 year. Highlights are listed below in chronological order.

- Summer Tutorial Program for children with special educational problems was held at a nearby public school.

- Typing Classes were held in cooperation with the Volunteer Interfaith Program at Takoma Park to help economically disadvantaged women of the county gain necessary skills to become financially independent.

- The Basic Key Punch course at Takoma Park provided low-cost training to enable individuals to qualify for job opportunities in Data Processing.

- Museum Without Walls series of five outstanding weekly art films was shown at both Rockville and Takoma Park campuses.

- A Community Aides Development Program was offered at the Rockville campus to enable aides from the County Housing Authority, Health Department and Social Services to deal more effectively with the clients they serve.

- A full-time counselor served as an on-the-scene specialist in counseling, advising, and registering for the rapidly growing extension credit programs.

- The Fourth Annual Vinton Lecture and Seminar was held on the subject, "Adequate Housing: Possible or Impossible?"

- A research project supported by Community Services resulted in a report on the Housing Needs of Montgomery County's Projected 90,000 New Workers. The Montgomery County Project of Metropolitan Washington Planning and Housing Association produced the report which was issued by the County Executive.

- A highly successful first mass walk-in registration for the Basic Real Estate Principles for Salesmen, required for licensure by the Maryland Real Estate Commission, was held. Over the year, at subsequent walk-in registrations, course enrollments more than doubled over the previous year to meet increasing demands.

- Counseling at county libraries about college programs in general was conducted weekly at various locations.

- Community Services cooperation helped in the establishment of the first Hourly Day Care Center at the college.

- A mobile van was borrowed from Catonsville Community College for ten days to publicize general college programs, as well as Community Services activities.

- A new offering of Automotive Awareness III - a "hands-on under-the-hood" course which included maintenance and simple repair was held at a garage in Takoma Park. Complementing Automotive Awareness I and II, this new offering was met with great enthusiasm by both men and women of the community.

- An Upward Mobility Program for employees of the National Oceanic and Atmospheric Administration to improve typing skills was held in Rockville for the first time. This program was successfully repeated later in the year.

- A very effective pilot course in Creative Dramatics for the rehabilitation of Viet Nam veterans was conducted by the Takoma Park Office of Community Services in cooperation with the Walter Reed Army Medical Center Psychiatric Department.

- A Lifeguarding Workshop, a training program to qualify individuals to become lifeguards at county swimming pools, was conducted in cooperation with the American Red Cross, the City of Rockville Municipal Swimming Center and the YMCA at the College's Aquatic Center.

- A data bank of educational activities in the county, a proposal of the Community Services Advisory Committee, was launched with county agencies having educational programs contributing information.

- Community Services staff members cooperated with Maryland Community Colleges in meeting problems of common concern.

- The Montgomery Light Opera Association, a community group supported by the Community Services Office, offered as its second production of the year,"Kismet," to highly favorable critical acclaim.

- The Applied Music Institute, sponsored cooperatively by the Community Services Office and the Music Department, conducted individual instrument instruction at a low cost to 353 members of the community over the year.

- With widespread Community Services staff support, "Open New Doors" --a two-day seminar for women--attracted a capacity crowd in its attempt to provide answers to concerns of modern-day women. This precedent-setting seminar provided the basis for an annual program to meet women's needs.

- The Second Business-Government Conference, sponsored jointly by Congressman Gilbert Gude and the Montgomery County Chamber of Commerce, provided information to county businessmen on how to obtain government contracts. The proceeds from the conference have been donated to the College to provide a scholarship fund for handicapped students.

- A week-long Piano Seminar on literature and technique "from the baroque to the present" for teachers, young artists and students was held in conjunction with the Music Department on the Rockville campus.

- The Fifth Annual Summer Jazz Consortium was held in June to offer opportunities for young musicians to study under leading jazz artists.

- The Summer Concert Series, supported by Community Services in cooperation with the Music Department, attracted an average of 450 at each of 12 different offerings.

An added dimension to the Community Services area of the college program was demonstrated by the increasing demand for training programs for government and industry, for programs to benefit the underprivileged, for a variety of cultural events to enrich the lives of county residents and for innovative programs to serve the needs of citizens in an increasingly complex society. The Community Services operation of the college benefits from the support and active interest of an advisory committee which meets regularly to give advice on a variety of topics. The committee was originally appointed in October 1970,and consists of individuals who represent a cross-section of community interests. Under recent bylaw revisions, the committee will be made up of 12 community representatives appointed by the Board of Trustees for a staggered two-year term. One-half of the representatives are to be retained from the present membership and one-half will be new appointees each May. The committee has met throughout the year to make recommendations on those ways in which the college can most effectively serve the community. As an outgrowth of such a recommendation, the Community Services Office is in the early developmental stages of a clearinghouse data bank for community education projects and services. A survey will be conducted to determine what ongoing education programs are being sponsored by various county organizations. A data-processing program will be written which will enable immediate retrieval of information about such activities.

Student Personnel Services Offered by Montgomery College

Each campus is organized to give major attention to the function of student affairs. It is through the offices responsible for student affairs that various types of student personnel services are organized, coordinated, and implemented at each campus. Community colleges are concerned with types of human growth and development other than intellectual, however primary may be this focus. Concern is also evinced about the social and personal types of growth and development. A major component of the social adjustment and adaptation factor is the development of a civic responsibility and citizenship skills. Such factors as mental and emotional health, avocational and recreational needs, and educational and occupational choices aligned with interests and capacities are among major components of personal growth and development. While the process of intellectual growth and development is affected by and in turn affects social and personal growth and development, some organized activities other than formal classroom or laboratory learning activities have more contribution to make toward social and personal growth. These activities, and other supportive activities designed to enable the student to encounter the formal learning experiences under the most favorable conditions for optimizing results, are commonly classed as student personnel services (or just student services).

The following student personnel services were reported by the Office of Student Affairs as being offered by Montgomery College.[14]

- Academic advisement
- Admission to the College
- Child day care
- Computerized grade and curriculum status reports
- Coordination with other colleges and universities
- Counseling: career, social-personal, and educational
- Early placement of high school students
- Financial aid services
- Food services
- Group counseling and focus group seminars
- Handicapped student services
- Health services
- High school liaison
- International student services
- Issuance of transcripts
- Job placement
- Mobile van counseling
- Public library counseling
- Registration for courses
- Seminar for Freshmen (credit course)
- Student record maintenance
- Student activities (e.g., newspapers, student government, social events)
- Study skills programs
- Testing services
- Transfer counseling
- Veterans services

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[14] Office of the Dean of Student Affairs, Montgomery College, October 3, 1973.

Part II - Educational Offerings Available to Montgomery County Residents by Other Agencies

Private Trade and Vocational Schools

In any area of the country, one of the clues as to need for educational programs in public institutions may be obtained from an examination of occupational training courses available for adults and youth in private schools and institutes. Often the cost of attending profit-making educational institutions prohibits many from taking advantage of the programs. More often than not such schools thrive by meeting a significant educational demand (significant in the sense that people are willing to pay substantial sums of money for those courses) which is not recognized and met by the public system of education. Staff members of ADL obtained information on the existence of such schools in both the District of Columbia and Montgomery County.[15] A listing of schools follows, with the number in existence shown in parenthesis. Most private trade and vocational schools in Montgomery county are in the "down county" area.

A. District of Columbia

Cosmetology, beauty culture, barbering (34)
Computer technology, data processing (23)
General business, shorthand, stenotype, typing, secretarial, receptionist, clerk, business machine operation (22)
Languages (13)
Religion and theology (12)
Health care, medical technicians, medical/dental assistants, nurses' aides, practical nursing, lab assistants, group therapy trainer programs (11)
Music (theoretical, voice, instrumental) (8)
Radio and television careers (announcers, broadcasters, script writing, technicians, etc.) (7)
Accounting, CPA review, cashier (6)
Real estate practice (6)
Clothing design, sewing, tailoring, dry cleaning (6)
Drafting (5)
Interior design (5)
Law (bar) review (5)
Art (commercial and fine) (5)
Electrical/electronics (4)

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[15] Office of Veterans Services, Educational Institutions in the District of Columbia Approved for Training Veterans Under Public Law 358, 89th Congress, as amended, October 1, 1970, Telephone Directory: Washington Yellow Pages, pp. 1136 - 1163, and Maryland Department of Education, "Maryland Nonpublic Specialized Approved June, 1972."

Occupational driving (taxi, truck) (4)
Entertainment (drama, acting) (3)
Hotel-motel management, bartending (2)
Security guards, private investigators (2)
Engineering licensing (1)
Airline service personnel (stewards and stewardesses) (1)

B. Montgomery County

Dance (16)
Cosmetology (8)
Music (5)
Art & Design (2)
Canine training (2)
Practical nursing (2)
Modeling (1)
Law Review (1)
Computer (1)
Tax service (1)
Flight training (1)
Secretarial (1)
Dry cleaning (1)
Barbering (1)
Performing arts (1)
Horsemanship (1)
Accordian (1)

Upon examining offerings of specialized proprietary schools operating in the District of Columbia and Montgomery County, we found them providing some educational programs of the types typically offered in public community colleges in the United States. This suggests that a significant demand seems to exist, especially in the District of Columbia, for educational programs of the following types: (1) cosmetology, (2) data processing technology, (3) clerical-secretarial, (4) medical technology, (5) dental technology, (6) medical laboratory technology, (7) practical nursing, (8) radio and television production, (9) radio and television technology, (10) accounting, (11) drafting, (12) commercial art and (13) electrical/electronics technology. In Montgomery County, programs typically offered in public community colleges for which most demand apparently exists are as follows: (1) cosmetology, (2) practical nursing, (3) art and design, (4) data processing (computer), and (5) dance, drama, and music for post-high school age persons. A few offer flight training and beauty culture (modeling). The relatively small numbers of private trade and/or vocational schools in the county would seem to indicate that most educational interests of residents are being met by existing institutions, either in the county or in proximity, or that private trade and vocational schools have not yet found Montgomery County. We suspect the former.

Adult Education Programs Offered by Montgomery County Public Schools

1. Introduction

The Montgomery County Public School Department of Adult Education has offered regular courses, lectures, day tours, overseas tours, workshops, short-term courses and services to community agencies such as homes for the elderly, the Detention Center, staff personnel of libraries, juvenile court, and school facilities. In 1972-73, day and evening classes were offered in 82 different locations. Thus, this department has been serving increasing numbers of citizens in classes offered, as is shown in Table 32.[16] Between the years 1962-63 and 1972-73, the number of students increased slightly over 209 percent. By 1980, it is anticipated that adult education programs will serve 70,000 adults.[17]

TABLE 32

NUMBER OF CLASSES AND STUDENTS IN ADULT EDUCATION CLASSES

Year	Number of Classes	Number of Students	Year	Number of Classes	Number of Students
1957-58	345	5,455	1965-66	810	21,426
1958-59	412	7,433	1966-67	917	24,818
1959-60	517	9,003	1967-68	1,102	27,036
1960-61	599	10,072	1968-69	1,247	32,254
1961-62	549	12,562	1969-70	1,301	34,617
1962-63	658	15,550	1970-71	1,285	39,523
1963-64	712	16,524	1971-72	1,301	41,920
1964-65	796	20,405	1972-73	1,425	48,061

Source: Montgomery Public Schools, "Progress Report on Adult Education," October 1, 1973, P. 10.

2. Adult Education Program Offerings

Twelve objectives of the Adult Education Program are given below, with some elaboration:

1. Plan, develop, and administer meaningful adult education programs for the citizens of Montgomery County.

Data shown in Table 32 show the results of implementation of this objective.

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[16] For a listing of specific classes and activities offered during the winter and spring 1973, see Appendix I, Table C.

[17] Montgomery Public Schools, "Progress Report on Adult Education," October 1, 1973, pp. 1 and 9.

2. Plan and administer programs that will assist adults to improve their reading and writing.

A program has been developed for Adult Basic Education to serve the needs of approximately 24,000 people in Montgomery County who have less than eighth grade education. Classes in the basic skills of reading, writing, and arithmetic are offered. An informal learning atmosphere is created whereby students may progress at their own rate. The aim is to reduce functional illiteracy in Montgomery County, improve the ability of the educationally disadvantaged to cope with many of the social problems which confront them in their day-to-day living, and to help them become more self-sufficient and productive citizens.

During 1973, an adult learning center was opened at East Silver Spring Elementary School, and English and reading skills are offered. The enrollment for the Adult Basic Education Program for English-speaking people, including participants at the learning center, totaled 968 students.

3. Conduct classes for adults who speak other languages to learn to speak, read, and write English.

The Adult Education Program offers classes in learning to speak English.

4. Provide opportunities for the undereducated and the unemployed to learn a skill that will enable them to obtain a job.

Under the Manpower Development Training Act, courses have been conducted in many different occupations, such as auto body repairman's helper, preapprentice bricklayers, preapprentice carpenters, electrician's assembler, and many others. Classes were held for apprentices of asbestos workers, electricians, surveyors, and carpenters to learn the skills related to their particular trade. Vocational classes for adult business education students gave women who wished to return to the world of work an opportunity to acquire the skills of typing, shorthand, medical procedures, and accounting.

A summary of Manpower Development and Training (MDT) Programs is shown in Table 33. Shown are the enrollments and numbers of graduates for each training program offered during the dates given.

5. Provide people already employed with skills to make them better employees.

The apprentice program has been expanded to cover the second, third, and fourth year of related subjects for the various trades. A "Hot Check" and "Shop Lifting" clinic was conducted for small business employees so they would be better able to recognize and cope with these particular illegal activities. A seminar in business management for the small business man was conducted to give him experience in public relations,

TABLE 33

SUMMARY OF MANPOWER DEVELOPMENT AND TRAINING PROGRAMS OFFERED

Name of Training	Dates	Actual Enrollment	No. of Graduates
Auto Body Repairman's Helper	12/63 - 09/68	157	84
Licensed Practical Nurse	09/64 - 09/73	253	186
Certified Lab. Assistant	01/65 - 01/66	17	11
Preapprentice Bricklayer	01/65 - 08/66	141	106
Preapprentice Carpentry	08/65 - 08/71	313	227
Clerk-Typist Entry	01/67 - 07/68	86	74
Clerk-Typist Refresher	01/67 - 05/67	40	34
Electronics Assembler	05/67 - 05/70	239	168
Practical Nurse Upgrade	02/68 - 06/68	20	19
Clerk-Typist (Entry) for Non-English Speaking	06/68 - 11/69	125	108
Auto Service Station Mechanic for Non-English Speaking	06/68 - 02/70	53	46
Nurse-Aide/Orderly	07/67 - 08/73	380	314
English Language Training	10/70 - 04/73	283	231
Auto Emission Control	10/71 - 09/73	2,528	2,528
Typing with English	08/72 - 03/73	20	19
Clerk General with English	07/72 - 04/73	22	22
Totals		4,677	4,177

accounting, record keeping, and employee training. Classes in business skills were conducted at the National Bureau of Standards and the National Institutes of Health. Classes in algebra, technical mathematics, and the sciences were held at the National Bureau of Standards and the Naval Ordnance Laboratory.

6. **Provide programs of cultural and social enrichment.**

Conversational language classes taught by native speakers have been held as a part of the general education program for adults. Music and art classes in adult education, in many different forms, have helped to enrich the lives of many citizens.

Day educational tours, around a particular theme, have been well received by the public, such as a tour with the emphasis on art including the Corcoran, Renwick, and National Galleries of Art. Other tours to such places as Frederick and "Old Town Alexandria" were historical in nature. A tour of Annapolis was conducted to see state government in action, and another tour of the state capitol was conducted for its historical value. Nearly 1,700 persons participated.

Three tours were conducted outside of the continental United States: the Holylands tour centered on comparative religions; one to Germany emphasized travel, art, and history; and the one to Hawaii stressed history, ecology, and fun. Participants studied geography, touring methods, and modes of travel prior to visiting the countries. They had an opportunity to become acquainted with the people with whom they would be traveling. Eighty-four people participated in these three tours.

The film-lecture series continues to grow in popularity. The use of the school auditorium has, by providing a theatre setting, enhanced the programs. During the past year, overcrowding was experienced at Paint Branch High School. At one particular lecture, approximately 250 people were turned away. This program attracted 12,321 people, of which 1,500 were senior citizens.

7. Offer educational opportunities for senior citizens.

All adult education classes are tuition free for senior citizens. Senior citizens may also attend the film-lecture series with no charge. A special seminar was provided for senior citizens on the topic of health, nutrition, consumer education, legal affairs, and the wise use of leisure time.

8. Provide education for residents of the County Detention Center.

A Model Learning Center has been established in two cell blocks at the Detention Center. The program included GED tests, preparation courses, and offerings in general education. The program was expanded to include the College Level Examination Program (CLEP).

9. Provide adults with an opportunity for parent education, to learn to understand their children and be better able to work with them.

A many-faceted parent education program begun in 1971 has been greatly expanded. Thirty-six different classes in parent-child development were held in six different locations. A new program in family communication skills was begun, with the participants being parents from all different occupational and economic backgrounds. As a service to the community, the family communication skills course also was offered to newly-appointed juvenile court workers. In cooperation with the Parents Without Partners Association, a seminar was held in Single Parent Life. A special parent education class was developed in cooperation with the Title I program to help parents become more effective language teachers with their own kindergartners. The parent education staff member served as a consultant for the Montgomery County Library Children's Services Section to establish a toy lending library.

10. **Promote the concept of schools being a center for community activity.**

In 1972-73, there were six schools with full-time community coordinators and four with part-time coordinators.

11. **Provide opportunities for the completion of a high school diploma**

The opportunity for adults to earn a high school diploma is available at Wheaton Evening High School and Gaithersburg Evening High School. Table 34 contains data on evening school enrollments.

TABLE 34

NUMBER OF STUDENTS AND GRADUATES OF EVENING HIGH SCHOOL CLASSES

School Term	No. of Students	Graduates
1962-1963	232	32
1963-1964	164	41
1964-1965	242	33
1965-1966	318	61
1966-1967	375	87
1967-1968	370	90
1968-1969	390	93
1969-1970	410	108
1970-1971*	386	105
1971-1972*	492	113
1972-1973*	485	140

*Includes composite of Wheaton High School and Gaithersburg High School.
Source: Montgomery Public Schools, "Progress Report on Adult Education," October 1, 1973. P. 15.

Another route for receiving a high school diploma is through the GED testing program. Classes for preparing people to take the GED test have assisted many people to receive the diploma. During 1973, a testing program was provided to determine whether a person should be enrolled in a GED review class; a special class leading up to the GED review, called High School Level; or an Adult Basic Education class. There were 536 enrolled in the GED test and 894 in the High School Level. High School Level classes are designed for students who are preparing for the GED examination, but require more extensive study and assistance in English, reading comprehension, and mathematics. The grade level of material covered is generally seventh through tenth grade.

12. **Provide counseling services for the undereducated and the disadvantaged, plus vocational counseling.**

Three part-time counselors assisted in student testing and placement. Counselors also worked with teachers and students to help the student attain a measure of success. One counselor was assigned to work in the Takoma Park-East Silver Spring area. Another counselor worked with the ESOL program. The third counselor was assigned to work with all classes in government agencies and GED classes county-wide.

Another major accomplishment of the adult education effort is the provision of counseling services to adults. This service has been used principally to assist those people who do not have a high school education. Many prospective students do not know whether they need help in basic skills, evening high school courses, or just a review in preparation for taking the GED test for a high school diploma. Presently, the program does not include vocational counseling except that the procurement of the high school diploma does open doors to other occupations.

Classes and Activities Offered by the Montgomery County Recreation Department

The Montgomery County Recreation Department offerings for adults during the fall 1972, winter 1973 and spring 1973 are presented in Table 35. The various activities have been grouped under the areas of (1) Creative Arts & Crafts, (2) Dance, (3) Exercise and Fitness, (4) Music, (5) Physical Activities, (6) Special Interest, and (7) Other Activities. Observation of the offerings reveals that a relatively large group of activities and classes are made available by this department to residents.

Community Services Offered by Selected Montgomery County Agencies

An examination of community service educational courses and activities offered for adults by Montgomery College (see Appendix I, Table B), the Department of Adult Education of the Montgomery County Public Schools (see Appendix I, Table C), and the Montgomery County Recreation Department (see Table 35), reveals an impressive array of opportunities available to citizens. A summary of the number of courses offered during the 1972-73 school year by each agency is shown in Table 36 by major category. Courses and activities offered by the Recreation Department are primarily geared to recreational and avocational leisure time interests. Arts and crafts and physical education and recreation receive major emphasis. At first glance, there would appear to be considerable overlap among offerings of the three agencies, particularly between the College and Adult Education Department.

TABLE 35

CLASSES AND ACTIVITIES OF THE MONTGOMERY COUNTY RECREATION DEPARTMENT

Classes and Activities	Fall 1972	Winter 1973	Spring 1973
Creative Arts & Crafts			
Sculpturing	X	X	X
Candle Crafting, Basic	X	X	X
Candle Crafting, Advanced	X		X
Crafts Unlimited (Macrame, plastic casting, mod-podge, paper mache, tie-dying, and other media)	X	X	X
Crafts Workshop for Group Leaders	X		X
Hand-Wrought Jewelry	X	X	X
Hand Crafted Pottery	X	X	X
Leaded Stained Glass	X	X	X
Leaded Stained Glass, Advanced		X	X
Macrame	X	X	X
Macrame, Advanced		X	
Printmaking	X		
Quilting	X	X	X
Advanced Quilting Workshops	X		
Weaving	X	X	X
Creative Weaving		X	X
Beaded Flowers	X	X	
Copper Enameling	X	X	X
Decoupage	X	X	
Kiln Formed Glass	X		
Silk Screening & Woodblock Printing	X		X
Candle Crafting Adv. I		X	
Candle Crafting Adv. II		X	
Silk Screen Printing		X	X
Woodblock & Linoleum Printing		X	X
Egg Decorating for all Seasons			X
Dance			
Square Dance	X	X	X
Modern Dance, Beginning	X	X	
Modern Dance, Intermediate	X	X	
Ballroom Dancing	X	X	X
Spanish Dance	X	X	X
International Folk Dancing	X	X	X
Adult Ballet, Beginning	X	X	
Adult Ballet, Intermediate	X	X	
Round Dance	X	X	X
Afro Jazz		X	X

TABLE 35 (Continued)

CLASSES AND ACTIVITIES OF THE MONTGOMERY COUNTY RECREATION DEPARTMENT

Classes and Activities	Fall 1972	Winter 1973	Spring 1973
Exercise and Fitness			
Body Rhythmics	X	X	X
Exercise to Music for Personal Fitness	X	X	X
Fun and Fitness	X	X	X
Slimnastics	X	X	X
Modern Gymnastics	X	X	X
Modern Gymnastics Workshop	X		
Hatha Yoga	X	X	X
Exercise (women only)			X
Music			
Recorder	X	X	
Contemporary Guitar	X	X	X
Classical Guitar	X	X	X
Folk Guitar	X	X	X
Baton Twirling	X	X	X
Physical Activities			
Bay Fishing Lecture Series	X	X	X
Fencing	X	X	X
Indoor Golf	X	X	X
Beginning Judo	X	X	X
Intermediate Judo		X	X
Advanced Judo	X	X	X
Karate	X	X	X
Recreational Sports for Men	X	X	X
Recreational Sports for Women	X	X	X
Self Defense for Women	X	X	X
Indoor Tennis	X	X	X
Outdoor Tennis	X		X
Outdoor Tennis for Women	X		X
Tennis Strategy & Tactics	X		X
Skiing	X		
Weight Training & Physical Fitness for Men			X
Special Interest			
Bridge	X	X	X
Cake Decorating (Basic)	X	X	X
Cake Decorating (Advanced)	X	X	X
Creative Party Planning	X	X	X
Flower Arranging	X	X	X
The Art of Flower Drying	X		X
Flower Drying & Arranging	X		
Intro. to Modeling for Women	X	X	
Poise and Personal Appearance Workshop for Women	X	X	X

TABLE 35 (Continued)

CLASSES AND ACTIVITIES OF THE MONTGOMERY COUNTY RECREATION DEPARTMENT

Classes and Activities	Fall 1972	Winter 1973	Spring 1973
Special Interest (continued)			
Creative Photography	X	X	X
Popular Photography	X	X	X
Darkroom Photography	X	X	X
How to Improve Your Films	X	X	
Mini-Maintenance for MS			X
Film Workshop			X
Other Activities			
Athletic League: Volleyball	X		
Athletic League: Basketball	X	X	
Senior Citizen Recreational Programs	X		
Christmas Workshops	X		
U.S. Air Force Band Concerts	X		
Community Chorus		X	X
Senior Citizens Clubs		X	X
Athletic League: Touch Football		X	X
Athletic League: Slow Pitch Softball		X	X
Sailing Instruction Classes		X	X
Athletic League: Golf			X

Source: Montgomery County Recreation Department, Festival of Arts, Fall, Winter, Spring.

TABLE 36

COMMUNITY SERVICE COURSES OFFERED IN MONTGOMERY COUNTY BY SELECTED AGENCIES, 1972-1973 SCHOOL YEAR

Major Category	MCPS Adult Edu.	Montgomery College	County Recreation Department
Agriculture		10	
Art (&Crafts)	82	29	55
Business	35	93	
Consumer	6		
Dance			25
Developmental Edu.		29	
English	17		
Family Edu.	7		
Foreign Lang.	52	18	
Handicapped	8		
Health	2	3	
History-Social Science	7	9	
Home Economics	101	23	
Literature & Comm.		27	
Mathematics	4		
Mildly Retarded	2		
Music	12	4	17
Photography		27	13
Physical Edu. & Recreation		20	73
Psychology	4	16	
Special Interest (Misc.)	32	4	24
Vocational (Trade & Technical)	20	24	
Adult (Formal School Edu. Elem. and Sec.)	8		

An examination of course titles revealed the following numbers of courses or activities offered by more than one of the agencies:

1. Arts and Crafts

Course Title	MCPS Adult Edu.	Montgomery College	Recreation Department
Ceramics	2	2	
Oil Painting	10	2	
Water Color	3	4	
Sculpturing	2		3
Leaded Stained Glass	4		5
Decoupage	5		2
Silk Screen	2		2
Woodblock Printing	2		4
Macrame		5	4

2. Business - Commerce

Course Title	MCPS Adult Edu.	Montgomery College	Recreation Department
Accounting	2	1	
Bookkeeping (Practical)	1	1	
Business English	2	2	
Business (Commercial) Law	1	3	
Investments	2	1	
Intro. to Data Process.	2	1	
Shorthand Refresher	2	1	
Stock Market Invest.	1	2	
Typing	6	6	
3. Languages - Communications			
Braille	3	1	
Communications	3	4	
Creative Writing	2	4	
English as a 2nd Lang.	6	2	
French	14	3	
Spanish	12	4	
4. Home Economics			
Clothing (Fabric) Construction	11	2	
Creative Stitchery	3	2	
Interior (Design) Dec.	2	3	
Knitting	3	2	
5. Music			
Recorder		4	2
6. Photography			
Photography		23	13
7. Physical Education - Recreation			
Sailing Instruction			2
Self Defense		2	3
Yoga		2	3
8. Vocational			
Refrigeration	1	1	

Several factors should be kept in mind when viewing the data presented above. First, not all duplication is bad or unnecessary. Second, before one could make a judgment about "apparent" duplication, it would be necessary to know the purposes of the offerings and the nature and scope of content involved--that is beyond the scope of this study. Third, the geographical location of the offering should be known--it may be that an identical offering by more than one agency would be needed to serve the area. Data presented above are only useful for providing a basis for discussion and exploration between staff of the agencies in areas where duplication appears to exist, to determine if it does, and whether it is useful or not.

Career Program Course Offerings in "Down County" High Schools

Presented in Table 37 are data showing the career-oriented offerings in Montgomery County public high schools serving residents in the "down county" area. These data are important for several reasons to the planning of community college career programs. First, community college career educational programs in some fields should be built on a base of high school level education and training to permit interested students to progress in the same field at a higher level. For this to happen, college planners need to know what career programs are offered in the high school and the extent to which they are available to all high school students. Second, in some instances where some career programs are available to students in some high schools and not in others, the college may need to consider establishing two entry levels of programs in a given field. Third, in some career program fields available to students in only a few high schools, needs should be considered for programs in those fields to meet the interests of high school graduates to whom such programs were not available at the high school level. Fourth, if vertical articulation of program content is to be effected between the high school and college offerings in the same field, this information may serve as a starting point for mutually beneficial discussions by staff of each institution on such matters as the nature, scope, depth, and sequence of knowledge and skill training appropriate at each grade level.

TABLE 37

CAREER PROGRAM COURSE OFFERINGS IN DOWN COUNTY AREA HIGH SCHOOLS, 1972-73

Career Program Offerings	BCC	Blair	Churchill	Einstein	Johnson	Kennedy	Northwood	Spring-brook	Wheaton	Whitman	Woodward	Totals
Industrial Education												
Graphic Arts & Visual Comm.	X	X		X	X	X	X	X	X	X		9
Drafting	X	X	X	X	X	X	X	X	X	X	X	11
Cartography Tech.									X			1
Woodworking	X	X	X	X	X	X	X	X	X	X	X	11
Carpentry									X			1
Bricklaying									X			1
Metalwork	X	X					X	X			X	5
Power Mechanics				X								1
Electricity/ Electronics		X	X		X	X	X	X	X	X		8
Electronic Tech.		X			X			X	X			4
Radio & TV Repair										X		1
Auto Body Repair & Painting							X					1
Auto Mech.							X		X			2
Horticulture							X		X			2
Cosmetology		X							X			2
Research & Exper. in Ind. Arts							X					1
Total by School	4	7	3	4	5	4	9	6	11	5	3	61
Home Economics												
Interior Design											X	1
Gourmet Foods	X	X	X	X	X	X		X		X		8
Marriage & Family	X		X					X		X		4
Human Dev. & Family				X	X	X						3
Child Dev. Lab.	X	X	X	X	X	X	X		X	X	X	10
Child Dev. Int.	X	X	X		X	X	X			X		7
Food Services									X			1
Creative Clothing		X										1
Bachelor Living	X	X	X	X			X			X	X	7
Fashion Merch. I	X	X			X							3
Fashion Merch. II	X	X			X							3
Total by School	7	7	5	4	6	4	3	2	2	5	3	48
Business Education												
General Office Clerk	X	X	X	X	X	X	X	X	X	X	X	11
Stenographers	X	X	X	X	X	X	X	X	X	X	X	11
Data Processing		X		X								2
Total by School	2	3	2	3	2	2	2	2	2	2	2	24
Cooperative Education												
Distributive Educ.	X	X	X						X			4
Cooperative Ind.		X		X	X	X	X	X	X	X	X	9
Data Processing		X										1
Fashion Merch.	X	X			X							3
Work Oriented Curric.	X	X		X			X					4
Total by School	3	5	1	2	2	1	2	1	2	1	1	21

SOURCE: Montgomery County Public Schools, Career Preparation in Montgomery County: Vocational Education, 15 pp. and "Career Preparation Course Offerings by Area - 1972-1973," (mimeographed), 3pp.

Summary

1. A public community college in Maryland is legally authorized to offer the equivalent of freshman and sophomore years of college work and to offer, in addition, terminal, vocational, technical, non-technical, and semi-professional occupational programs. It is the intent that occupational programs will help meet manpower requirements for middle management and technical levels in such fields as health services, engineering, public services, business and commerce, and in the artisan, trade, and service levels within each of these broad occupational fields.

2. The 16 community colleges in Maryland grant associate degrees for two-year programs and certificates for some occupationally related programs of less than two years duration. The liberal arts and sciences program is the same as at a four-year college or university, and while occupationally related programs include some study in liberal arts and sciences, they are designed to prepare students for employment in fields requiring college-level preparation.

3. Community colleges also offer a vast array of community services courses, including short-term, non-credit, and special-interest, as well as other activities.

4. Over one-half the college students (53 percent) are enrolled in liberal arts and science transfer or general curriculum, 22 percent are in career programs, and about 25 percent are in non-degree programs.

5. Montgomery College has two campuses, Rockville and Takoma Park, and each provides instructional and support facilities, but no dormitories, residential halls, or other living facilities.

6. The 1973 academic fall enrollment at Montgomery College was 11,708 persons who carried a total aggregate number of semester hours to equal 7,992 full-time enrollments. Approximately 53 percent of all students were enrolled full-time and 47 percent were enrolled part-time (less than 12 semester hours). Slightly more than three-fourths of all freshmen, and 70 percent of all sophomores were enrolled at the Rockville campus. About two-thirds of the students at Rockville attend during the day, with a slightly smaller percentage at Takoma Park during the day.

7. There is a recent trend for increased numbers of part-time compared to full-time enrollments, and this trend is projected to continue through the decade in Maryland as the full-time equivalent enrollment increases by 65 percent.

8. Between 25-30 percent of the college students are age 25 and over. About one-fourth are married, and 90 percent live in Montgomery County. About 8 of every 10 college admission applicants enroll at the college. Slightly more than 7 of every 10 students enrolled during the fall return the following spring term; larger percentages of full-time than part-time students return.

9. Percentages of high school graduates attending Montgomery College vary considerably among the high schools and the 26 percent figure for 1970 declined to 19 percent in 1972. Nearly 73 percent of the 1972 "down county" area public high school graduates continued their formal education during the 1972-73 year and 21.3 percent attended Montgomery College.

10. Data from a follow-up of Montgomery County 1972 public high school graduates indicated that 22.9 percent enrolled at Montgomery College, 26 percent went out of state, 14.7 percent enrolled at the University of Maryland, and the other 6.1 percent enrolled other places.

11. A follow-up study of Montgomery College spring 1973 graduates revealed 63 percent planned to enter the junior year of a four-year college or university in the fall and 35 percent planned to work full-time. Two percent had no definite plans.

12. During the fall 1973, ten curricula, including liberal arts, were offered. Also offered were two general education programs, and career programs in 38 fields.

13. A variety of community services is offered, including over 100 course and section offerings located at more than a dozen sites. Most organized and college-sponsored community service activities are of a special-interest course variety. Other forms of community services are in their development stage.

14. A variety of student personnel services is maintained, including guidance and counseling.

15. A relatively small number of private trade and vocational schools exist in Montgomery County, but those that do exist indicate interests in (1) cosmetology, (2) practical nursing, (3) art and design, (4) data processing, and (5) dance, drama,and music for post-high school-age persons.

16. Some of the same type of offerings are provided by Montgomery College, the Department of Adult Education, Montgomery County Schools, and the Montgomery County Recreation Department. Duplication appears to exist,but further exploration is necessary to determine if it is needed or unnecessary.

17. Career program course offerings in "down county" area high schools are provided to serve as a base of information for college program planners and as a starting point for mutually beneficial discussions by staff of each institution on such matters as the nature, scope, depth,and sequence of knowledge and skill training appropriate at each level.

CHAPTER VI

INFORMATION FROM COMMUNITY LEADERS AND OTHER CITIZENS

Introduction

During this study, an attempt was made to obtain information from adults concerning their interests in educational programs and services. Several different methods were used. A group of persons designated as "community leaders" were contacted by questionnaire, as were the parents of all children in the fifth grade of selected elementary schools located throughout the "down county" area. Other methods included conducting three public forums, to which the public at large was invited. This chapter contains data from these sources.

Part I - Community Leaders

The assumption was made that persons who had given public service in one of several ways would be more knowledgeable about the educational needs and interests of residents in the "down county" area than other persons. For this purpose, 293 persons, whose names were listed in the 1972-73 Rainbow Directory as having served as the president or chief officer of various community organizations and agencies, were contacted. They were invited to respond as a knowledgeable individual, by virtue of their contacts, rather than for the group of which they had served as leader. To this group were added librarians of "down county" libraries and principals of elementary schools. Of the 293 community leaders contacted, 139 respondents (47.6 percent) provided 127 usable replies (43.4 percent).

General Characteristics of Community Leaders Responding

Six percent of the respondents had lived in Montgomery County less than five years, 22 percent had lived there 5-10 years, and 72 percent had lived there more than ten years. Eighty-four percent had a bachelor's or higher degree, as the highest level of schooling attained, 2.4 percent had a two-year college degree, 8.6 percent had completed some college but did not earn a degree and 5 percent had attained a lower level of education.

Since leaving high school, 2.4 percent of the respondents had received no additional formal schooling, 36 percent had received some form of on-the-job training,and 7 percent had attended a business college. None had gone to a nurses' training school, and 4 percent had attended some other type of trade or technical school or institute. Ninety percent had attended a college or university; 15 percent had taken a correspondence course; and 19 percent had attended a military service school. Nearly 38 percent had taken an adult education course offered by a college or public school. Fourteen percent had other types of educational experience. Obviously, a number of the respondents had more than one type of education since leaving high school. Less than 1 percent (0.8 percent) did not graduate from high school.

Shown in Table 38 are the percentages of respondents by type of past association with the college from which they had received most information about it. For example, one can observe from the data that of respondents having lived in the county less than five years, 12 percent had a spouse who had been a student at Montgomery College, while 13 percent with this residential tenure had one or more children who had been a student there, and three-fourths had no past association. The rest of the data are to be read likewise. Observing the data, one can see that the longer respondents had lived in the county, the more association of one type or another they had with the college. Having relatives, friends or children who attended the college was the past association from which 42 percent had received most information; over a third (35 percent) had no past association with the college of the types mentioned.

TABLE 38

PERCENT OF RESPONDENTS BY TYPE OF PAST ASSOCIATION WITH MONTGOMERY COLLEGE FROM WHICH THEY HAD RECEIVED MOST INFORMATION

Source of Information about Montgomery College	Length of Time Resident in the County			Total Group
	Less than 5 Years	5-10 Years	Over 10 Years	
Was a student	-	4	9	7
My spouse was a student	12	7	-	2
One or more children has been a student	13	11	17	15
Other relatives or friends have enrolled	-	25	29	27
I attended non-class activities offered by the college	-	11	7	7
Employed by the college	-	-	1	1
No past association	75	39	30	35
No response	-	3	7	6

Student Quality and Reasons for Attendance

Respondents were asked how they would characterize the academic quality of students attending Montgomery College. This was an attempt to get a clue as to the image respondents had about one important aspect of the College. Seventeen percent indicated they believed the academic quality of students was "better than average," 7 percent believed it was "below average," and 45 percent thought the quality was "average." Thirty-one percent indicated they didn't know about this matter.

Shown in Table 39 are the most important reasons why respondents thought students attended Montgomery College. One can see that nearly one-half (48 percent) believed lower cost than elsewhere was the most important reason for student attendance. The next largest percentage (18 percent) believed attendance was because campuses were conveniently located, and 11 percent thought students hear that the College offers a good education. Twenty-three percent cited each of several other reasons.

TABLE 39

PERCENT BY MOST IMPORTANT REASON
WHY STUDENTS ATTEND MONTGOMERY COLLEGE

Reason	Percent
Lower cost than elsewhere	48.0
Conveniently located	18.1
Courses wanted are offered	7.1
Difficulty in another college	2.4
Advice of others	3.2
They hear Montgomery College offers a good education	11.0
Other	10.2

Shown in Table 40 are the percentages of respondents who indicated the degree of importance which each of several factors are in causing more of their adult acquaintances and friends to enroll in Community Services non-credit, short-term, special-interest classes provided by Montgomery College. It can be seen, for example, that of all the respondents, 59 percent felt that more adequate information about special-interest classes for adults was of "much importance" in causing more of their friends and acquaintances to enroll in Community Services classes, while 35 percent believed it was of some importance. The largest percentage of respondents, 94 percent, believed this factor was of some or much importance, while the next largest percentage indicated that improved methods for determining topics or subjects of special interest to adults was the next order of importance for the factors listed.

TABLE 40

IMPORTANCE OF FACTORS RELATED TO INCREASED ATTENDANCE OF ADULTS IN COMMUNITY SERVICES CLASSES

Factors Affecting Enrollment in Community Services	Percent by Degree of Importance		
	None	Some	Much
More adequate information about special interest classes for adults	6	35	59
Better transportation facilities	31	43	26
Improved methods for determining topics or subjects of special interest to adults	9	53	38
Reduce costs of attending special interest classes	27	52	21
Offer special interest classes for women during the daytime	14	54	32
Closer cooperation between the college and community organizations in sponsoring special interest classes for adults	21	37	42
Other	8	15	77

Other factors of importance contributed by respondents were as follows:

A. Location

Provide courses in locations other than on a campus
Off-campus courses
Better location than now available
Offer classes at different locations

B. Curriculum

Women are particularly tired of taking courses for no credit and with no clear career goals
Assurance of adhering to highest academic standards
Special attention to retired persons
Less of witchcraft and similar subjects and more emphasis on courses of value
Not merely practical courses--perhaps offer a variety of liberal arts courses

C. Support Services

Better parking
Bus service once an hour; arriving five minutes after class starts is impossible
Provide day-care centers

D. Miscellaneous

Much duplication of effort by Board of Education, Recreation (Department), community schools, etc.

Interests of Adults in Non-Credit Special-Interest Subjects

Slightly over one-third of all respondents (34.6 percent) indicated there were special-interest subjects or topics that they believed would serve the educational-cultural interests of residents in their area, in addition to a list of 32 types of community service offerings which the college has provided in the past. When a given offering was suggested by more than one respondent, the number suggesting it appears in parentheses. Suggestions for non-credit special-interest courses follow.

A. Business

Financial Management
Consumer Automotive education (basic car education and how to keep from being gypped)
Consumer education--relative to ecology
Analyzing warranties and fraudulent advertisements
Personal financial management
Consumer education
Problems of small businesses (2)
Principles of real estate management brokerage for the consumer
Principles of accounting
Retirement programs

B. Conservation

Environmental Awareness
Planning techniques
Citizens' Guide to Land Use Planning
Energy Conservation
Ecology

C. Health Related

First aid (2)
Home nursing
Nurse refresher
Practical nursing
Alcohol abuse
Diet and nutrition
House storage of food--how long to keep safely
Sex education
Drug abuse

D. Languages--Communications

Russian (4)
English for non-speakers (3)
ESOL
Greek
Chinese
Public speaking
English
Computer programming
Advertising in the newspapers

E. Literature

Great books
Religions--study
Literature
Philosophy

F. Music, Art

Other related music courses
Music appreciation (3)
Instrumental music--organ or voice
Musical instruments
More arts
Art history
Architectural appreciation
Beginning Antiques
Courses dealing with rapidly increasing numbers of collectors--art, antiques, coins, stamps, etc.

G. Psychology

Child development
Psychology of adolescence
Child management P.E.T.
Parenthood (Problems in raising children)
Marriage management
Understanding yourself
Single parent families
New psychologists--"Self-Help" Psychology
Child study and particularly adolescence
Child rearing
Child psychology
Basic psychology
How to help your children in school

H. Recreational

Contract bridge
Sports facilities
Geology for amateurs
Travel discussions
Tennis

I. Social Sciences

- Principles of civic responsibility and involvement
- Organization of grass roots Civic action groups
- Economics (2)
- Local history
- American history
- Practical citizenship
- News analysis and evaluation of the truth
- Women's studies
- History
- Politics of planning and zoning
- Topics in local government
- The political process in Montgomery County (i.e. structure and function of County government)
- Practical political action
- Citizenship-guide to living in Montgomery County
- Political science
- Citizen effectiveness--lobbying
- Parliamentary procedure
- Citizens' guide to land use planning

J. Trade-Technical

- Engineering courses
- Home repairs
- House wiring
- House construction
- Home and yard maintenance
- Small engine repair
- Handy-man courses (plumbing, electricity, etc.)
- Auto mechanics (2)
- Automotive repair (2)
- Aviation
- Auto repair and tune-up for novices
- Furniture refinishing
- Car repair principles
- T.V. repair

K. Miscellaneous

- Math--(new)
- Adult driver education
- Understanding secondary education methods
- Other arts and crafts
- Courses to complete high school
- Work with local libraries
- Gourmet cooking
- Career education of relevance

"In connection with the career ed/emphasis we are supposed to be having in the US, many of the cultural/educational types of programs for no-credit are beginning to displease women. Many of the above (community services courses listed) are covered and should be covered by the Montgomery County Public Schools adult education program and by the Montgomery County Recreation Department. Why do we constantly need to duplicate? Let's move to better quality rather than three ceramics courses sponsored by three county institutions."

Suggestions For College Credit Programs Which Might Be Added

A list of all college-credit, two-year degree and one-year certificate programs now offered by Montgomery College was provided to respondents. They were asked to give suggestions for additional types of regular college credit programs, not now offered youth and adults. Listed below are their suggestions, and if more than one respondent gave the same answer, the number is shown in parentheses.

A. Agriculture-Related

Conservation--Forestry
Natural resources
Nursery science
Horticulture
Pre-veterinary

B. Business-Commerce

Real estate brokerage
Real estate--sales management
Economics
Photographic practices
Public administration
Accounting
Apartment management

C. Communications

Journalism reporting
Debating
Editorial writing
Public speaking

"One of the continued deficiencies of graduates is an inability to express ideas clearly."

D. Education

Teacher education
Special education

"Special education, educational aides in special education. A need exists to train diagnostic/prescriptive teachers in specific areas of exceptionalities, such as in mental retardation and specific learning disabilities programs."

E. Health

Mental health
Current trends in nursing
Emergency para-medicine
Psychiatric aide
Graduate nursing courses
Dental hygienist

F. Liberal Arts and Pre-Professional

Pre-law
Pre-medicine
Psychology
Logic
Urban planning
Government, theory and practice
Sociology
Library science
Child psychology
Community involvement

G. Performing Arts

Dance (2)
Theatre

H. Sciences

Oceanography
Ecology (3)
Environmental sciences

I. Trade or Technical

Auto mechanic (2)
Bicycle technology
Carpentry (3)
Bricklaying (2)
Plumbing (2)
Expand the one-year certificate program
Any labor-short trade or skill
Air conditioning repair
Manual job courses
Drafting
Industrial design
Electricity
Expand voc-ed in such areas as the building of houses

" Should the State of Maryland require that T.V. repairmen and auto mechanics be licensed, I would hope M.C. would be ready to assist in this area! "

"More emphasis should be placed on vocational training in a trade."

J. Miscellaneous

Offer four-year degree programs (3)
Have a program to prepare funeral directors

"I am strongly concerned about the amount of actual work done by the College in setting up new courses in the labor market analysis area. This is not atypical in Montgomery County, but rather typical all over, that our career education programs respond to past or present needs rather than future needs. There needs to be additional work done with "sending" institutions on labor market realities such as the elementary teacher surplus we now have and will probably continue to have for some time. We also need a facility which can re-educate whose skills and training are outmoded, unable to be utilized or transferable with some additional work. Women who drop in and out of the labor market force need courses to refresh and renew skills."

"Have you ever stopped to consider that maybe you are offering too much? Sometimes quality is better than quantity."

Suggestions for Cooperation Between Montgomery College and Community Organizations or Groups

Forty-two percent of all respondents believed there were ways Montgomery College could cooperate more with community organizations or groups in promoting and providing educational-cultural services of interest to residents. Thirteen percent did not think so, 43 percent did not know, and 2 percent did not respond to the question. Various suggestions submitted for more cooperation of this type were as follows.

1. Community to the College

Have an "open house" in daytime and/or evening and invite the community with an intensive publicity campaign at which time available services could be promoted.

Would like to see MC sponsor performances of area music and drama groups (other than and in addition to their own) such as Baltimore Symphony on campuses.

More community use of physical education facilities--pool open to community on weekend--schedule plays and performances at the college. Closer cooperation with Montgomery County High School students and teachers.

Offer meeting rooms for Montgomery County Community Organizations.

An excellent input would be from the many civic associations that exist in the county. As a member of one, we are not aware of any representative of the college to whom we can offer suggestions.

2. College to the Community

Promote educational services throughout the citizens' associations which exist in each area of the county.

Provide instruction to small groups in the subjects they desire and at a convenient location.

Have a college representative speak at association meetings on opportunities available to the general public at MC.

Adequate community/public relations liaison to provide better communication than is now practiced, and to avoid eminent domain crises such as the recent notorious "Block 69" controversy in Silver Spring.

Speakers for service clubs, PTA's, church groups, etc., on pertinent subjects.

The county government and county organizations constantly need information on county needs and opinions. The college could use its students to make surveys. This would teach the students and serve the community; e.g., what transportation services are required, or what park facilities are wanted?

Speaker bureau availability--Room availability for meetings

Send out specific course proposals; ask groups to poll individual members.

Might have teacher presentations for group meetings; i.e., a speakers' bureau

Exhibits at shopping centers

Assembly programs for high schools

Off-campus subjects at local high schools

Make it possible for Civic Associations to request particular courses in their community with your teachers.

Appear at PTA meeting and Civic Association meetings to tell what MC has to offer.

Survey needs of high school drop-outs, vocational needs of unemployed, and seek to provide non-work hour capability to learn trades, etc.

Go to each Elementary school and determine the needs of the community and provide some sort of baby-sitting.

The college has attempted to work with organizations in the past, but I believe it has primarily been through the mail. Direct contact with organized groups by means of group discussions with the organization leaders would stimulate them to be more aggressive in promoting the college and developing more ideas on communication techniques with such groups.

Have speakers who contract to appear for meetings show up or at least call. Two years ago, a speaker was engaged for a program on the Middle East, but didn't show. Many of our Club members see red when MC is mentioned.

Provide speakers. Have an information telephone manned during evening and weekend hours.

Offer more courses at community centers or recreation centers.

Evening cultural programs--sending invitations to PTA groups and schools (secondary)

Attend community organization meetings to determine what the community needs.

3. Cooperation and Coordination

Cooperate with the Montgomery County school system, recreation department, or county government.

Contact and coordinate with the job market, and offer on-the-job training.

MC could organize or facilitate organization of seminars on special topics of interest to leaders of community organizations or groups.

Call together, in a workshop atmosphere, interested community representation to explore possibilities; this should be done as an ongoing process for community participation.

Work with existing programs; i.e., over age 60 counseling and employment service, by providing instructors and space for retirement seminars.

More performances involving cooperative efforts; help people deal with social problems, help people deal with emotional problems, help communities work together.

Seems to be competition among Board of Education Adult Classes, Recreation Department and College--should be more cooperative and less overlap.

More coordination between Adult Education Department of the public school system and the Recreation Department with MC.

Permanent library advisory committees for board of trustees

Identify the organization or group and make an effort to inform them and get their views on what they need.

Coordinate adult education offerings by recreation, community schools, and other agencies offering adult education into one catalogue of offerings.

4. Communication

Publicity through local newspaper and radio-handouts in schools, etc., mailing to residents, bulletins

Better publicity

Maintain an information liaison office.

5. Miscellaneous

The Montgomery County School System has provided some classes like those suggested for non-credit community services. Perhaps MC working into this program could add a "more cultural" touch.

Stop being so high-handed and arbitrary about expansion decisions.

Community Planning and Development issues--AWT alternatives, CBD plans and zones, etc.

Emphasize courses having substantive content and give talks on these courses and general activities to community groups. ("Dance Therapy"! Ugh!)

The County uses many volunteers. A course on how and what is expected to be a useful volunteer is sorely needed.

Sponsorship of youth/adult programs or parent/student relationships

Part II - Public Forums

For the purpose of obtaining opinions from residents of the "down county" area about educational programs and services needed, three well-announced public forums located in different parts of the area were organized and conducted by members of the Montgomery College Advisory Committee on Program Identification in the "Down County" Area. Some members of the Committee attended a fourth forum organized by the Allied Civic Group, Inc. Persons attending each forum were supplied materials showing the programs and services already offered by Montgomery College. As a reminder of the purposes of each forum, written questions which had previously been publicized in news media announcing the location, purposes, and time of the forums were also provided to persons attending each forum. The questions were:

1. What programs and services should Montgomery College offer to residents with some, or no, previous college training?
2. Are there basic and advanced programs whigh the college should offer in cooperation with such organizations as unions, trade associations, professional groups, etc.? If so, what programs?
3. In the Public Schools, courses are taught in such fields as auto body repair, auto mechanics, beauty shop work, and interior design. Should Montgomery College also provide programs in such fields, including advanced level courses? If so, what fields?
4. Montgomery College offers degree programs in 19 fields for students who intend to transfer to four-year colleges. It also offers 29 degree and certificate programs in vocational, technical, and other career fields. In what additional fields should new programs be offered?
5. Should the college offer programs in continuing education and special services for such special groups as senior citizens, Spanish-speaking persons, and mothers of small children? What special groups? What types of programs?
6. There are many persons in the county who have bachelor's, master's, and doctor's degrees. Are there programs and services which Montgomery College should offer them? If so, what?

In addition to newspapers serving the area, attempts were made to publicize the forums through contacts with various organizations and agencies in the "down county" area. Forums were held October 25 at White Oak Junior High School, October 30 at Leland Junior High School, and November 7 at Newport Junior High School. In spite of generally good weather and attempts to disseminate information about the forums to the public, attendance was less than had been expected; a total of approximately 50 citizens attended one of the three forums. Lively discussions and presentations by forum participants resulted in the ideas and opinions summarized below.

1. Specific Offerings Recommended

Start with liberal arts and sciences that can transfer and assure a top-quality first two years of college. This program should be duplicated on each campus.

Continuing education program for business professionals for job upgrading (case method-problem solving, etc.), including use of statistical methods in business

English as a second language

Physical fitness for older women

Courses on labor management relationships and the place of unions in society

Supervisory training to people from the trades and industrial occupations to prepare them for administrative positions

Russian and Chinese languages

Program for training foreign language translators

Prepare reading assistants for the public schools.

Program to prepare and license family day care mothers

Program to prepare bio-medical equipment technicians both (1) to utilize and operate the equipment and (2) to repair and maintenance such equipment

Program for the training of volunteer tutors for gifted, retarded, deliquent, etc.

Licensure programs for auto mechanics, T.V.-Radio repairmen, and air conditioning, heating, and refrigeration specialists

Technology program in the building trades which could be built on top of craftsmen type programs offered in high school

2. People to be Served

Senior citizens are interested in all courses anyone else is so don't set up special courses,but make them accessible through location and transportation facilities.

Older women need opportunities for retraining; (e.g.),training in office machines.

Involve senior citizens in developing programs of interest to them.

Consider the needs of apartment dwellers for programs related to specialized and unique problems.

Give child care education for college credit to prepare housewives and other parents for their occupation of raising children.

3. Characteristics of Programs Offered

In the occupational education areas teach the work ethic as well as technical skill.

Provide advanced vocational education which does not unnecessarily duplicate offerings in the high schools.

The college should be a place for all people to enhance their education and training and to enrich their own views in the arts and other fields.

4. Services Recommended

Arrange cooperative use of college facilities for meetings, conferences, and luncheons by community groups.

Offer college program related activities such as art shows, theatre, and music open to the public. Offer Sunday concerts and song fests.

Some thought should be given by the college to the role it should play in coordinating volunteer services.

Give forums for single parent families and for parents on the values and advantages of vocational education.

5. Problems

Transportation was pointed out as a problem always--there is no holiday period bus service.

Campuses need to be better marked so people can find them.

Communication between the college and the public was cited as a problem. The college was urged to think of ways to communicate with the community--people have to be told over again what courses and services are offered and when.

Use students and student class related field experiences and projects and build the community service function into the college curriculum structure.

The college should be a focal point of community identification, but residents don't know about it.

6. Miscellaneous

College should offer work at technical levels only.

The college should be selective in its listening to community demands for programs.

Build a proper true college educational atmosphere, including college vocational education atmosphere.

In addition to the comments and suggestions shown above which came out in the public forums, several themes (or threads of discussion) permeated the discussions. They were as follows:

1. There is an apparent lack of communication and understanding of Montgomery College by citizens.

2. A fair percentage of persons who attended the forums do not know what Montgomery College does, what its programs are, or anything about successes of its graduates or nature of the student body.

3. While the general education and liberal arts curricula are of major concern as being the mainstream (or focus) of collegiate curricula offered at Montgomery College, there is strong feeling that occupational programs offered be of high quality and relevant to needs of the area.

Part III - Senior Citizens

Introduction

As part of this study, an attempt was made to explore the opinions and interests of a few senior citizens living in Montgomery County. The primary focus of effort was to develop an information gathering instrument and to conduct a pilot study rather than to contact a large number of persons. The purpose was to determine if clues obtained from the pilot study would seem to warrant more widespread investigation.

A preliminary questionnaire was developed. It was hand delivered and tested on a group of senior citizens living in an apartment complex who were not included in the study. Considerable modifications in the questionnaire resulted from the test trial. With the assistance of a member of the Advisory Committee, the revised edition was distributed to a number of persons. This section contains the results from 37 senior citizens who responded.

Characteristics of Respondents

Eight percent of the respondents were under age 60, 11 percent were age 60-64, 43 percent were age 65-75, 35 percent were over age 70, and 3 percent did not indicate their age. Responses were received from 4 men and 33 women. Since there were so few men, responses for both men and women were considered together rather than separately. Slightly over one-half (51 percent) of the respondents had attended college, 46 percent had not attended college, and 3 percent did not indicate level of educational attainment. Included in the 46 percent who had not attended college were 19 percent who did attend some kind of trade or vocational school. None had not attended or completed high school.

Of the respondents who had attended college, 42 percent described the work they did as professional; 32 percent described the work as semi-professional-technical; and, 26 percent indicated the work had been skilled. Of the respondents that did not attend college, 24 percent described their work as professional, 12 percent indicated semi-professional-technical, 18 percent indicated highly skilled, 29 percent indicated skilled, 11 percent indicated unskilled, and 6 percent did not respond. Thus, of all respondents, 32 percent described their previous work as professional, and 22 percent described it as semi-professional or technical.

Nature of Interests

Respondents were asked if they thought senior citizens had special recreational, leisure time, or educational interests different from people who have not reached retirement age. Of senior citizens who had not attended college, 82 percent indicated they did have special interests compared with 58 percent of those who had not attended college. Over one-fifth (21 percent) of the senior citizens who had attended college did not think this was true compared to 6 percent who had no college. Others did not know.

Of all respondents, 70 percent believed senior citizens did have special interests different from those of people who had not reached retirement age. Comments about how the interests differed were given as follows by respondents who had not attended college.

Only in age
More time and interests
Don't participate in highly physical recreation
Opportunity to do all the things you never had time for
Have more leisure time to fill and need worthwhile activities as a challenge
More relaxed interests
More recreational time

Those who had attended college responded as follows:

Day time rather than night time activities
Less energy required and less expensive
More time; need for achievement and encouragement both; desire for usefulness of activity
In those activities where age causes a slow down
Opportunity for community interests
Getting together
Less physical -- more mental especially philosophical
Less physical participation required

Respondents were asked if they thought senior citizens preferred to have special recreational, leisure time and educational-cultural activities organized especially for them rather than being able to participate in these activities with people of younger ages. Fifty-seven percent of all respondents thought this was the case, while 30 percent did not think so, 8 percent didn't know, and 5 percent did not respond.

Types of Interests Expressed by Senior Citizens

Senior citizens were asked how they would describe activities and programs in which they would have an interest, and they were permitted to indicate more than one type. The largest percentage (46 percent) indicated a recreational type interest, and 43 percentage each indicated leisure time-hobby-avocational and educational-cultural interests. Six percent indicated none of these interests, and another six percent did not respond.

Types of interests differed, depending on whether the respondents had attended college. Recreational type interests were indicated by 42 percent of those who attended college, compared to 53 percent of those who had not. Leisure time-hobby-avocational type interests were indicated by 53 percent who had attended college and 29 percent of those who had not. Educational-cultural type interests were indicated by 53 percent who had attended college compared to 35 percent who had not. It may be of interest that 21 percent of the persons who had attended college expressed no interest in any of these types of interest compared to 6 percent who had not attended college.

Senior citizens who expressed an interest in one or more types were asked to name their interests. Shown in Table 41 are the responses by number of persons indicating each activity or program.

TABLE 41

ACTIVITIES AND PROGRAMS OF INTEREST TO SENIOR CITIZENS

Activity or Program	Number by Level of Education		
	High School	College	
	Women	Women	Men
Theatre	3	3	1
Bridge	3	4	1
Art	1		
Arts & Crafts	2		1
Planned trips	2	1	
Lectures on interesting & timely subjects		1	2
Reading		1	
Language	1		
Travelogues	1		
Travel		1	
Literature		1	
Singing	1		
Music		1	
Piano lessons		1	
Dancing	1	1	
Sewing	1		
Knitting	1		
Russian culture			1
Chinese culture			1
Photography			1
Cards			1
Games		1	
Volunteer Work		2	
Flower arranging		1	
Shuffleboard			1
Hiking			1
Swimming			3
Senior citizens Org.			1
Bowling			1
Info. on Auto Motors			1
Social Interests		1	
Discussion Groups		1	
Secretarial	1		
Handiwork	1		
Handicraft		1	
Gardening	1		
Races		1	
Athletics		1	

Senior citizens were informed that in other parts of the county, some senior citizens up to age 75, regardless of previous background, have always wanted to take freshmen and sophomore level subjects but never had time. They were asked what would now be their interest in studying such subjects. Fifty-four percent indicated they were not interested; 22 percent would be interested on a non-credit basis; 5 percent indicated interest on a college credit basis; 19 percent did not reply. Of respondents who had attended college, 47 percent compared to 59 percent who had not attended college were not interested, but 32 percent of those who had gone to college compared with 12 percent who had not were interested on a non-credit basis. About 5 percent of each group were interested on an academic college credit basis. Others did not respond. Respondents were given an opportunity to indicate one or more fields of interest. Percents who had attended college and expressed interests in college level subjects were fine arts -- drama, art, music, dance -- 26 percent, foreign languages -- 5 percent, liberal arts -- 16 percent, psychology -- 5 percent, health and physical education -- 5 percent, and recreation activities -- 10 percent. Sixty-three percent did not reply. Percents who had not gone to college and expressed interest were fine arts -- 12 percent, psychology -- 6 percent, and recreation activities -- 12 percent. Over three-fourths (76 percent) indicated no interest.

Adequacy of Service and Problems

Senior citizens were asked if they thought the activities and programs offered for senior citizens by the Montgomery County Recreation Department and the Adult Education Department of the Montgomery County Public Schools met all needs and interests of senior citizens. Of all respondents, 40 percent indicated all interests were met, 16 percent indicated they were not adequately met, and 43 percent did not know. Twenty-six percent of the persons who attended college believed all needs and interests of senior citizens were not met, compared to 6 percent of those who never attended college.

Respondents were asked what they thought were the most important reasons why greater numbers of senior citizens in Montgomery County did not enroll, either for credit or no-credit, in courses at Montgomery College campuses in Rockville or Takoma Park. Each was permitted to indicate one or more reasons. Of all respondents, 51 percent indicated a reason was lack of transportation to where programs are offered, 22 percent believed the activities were too expensive, and 30 percent did not know what was offered. Fourteen percent indicated no interest. Nineteen percent indicated they did not know senior citizens were welcome in college programs, and one person indicated, "they are not welcome." Nineteen percent indicated they thought if a person had less than a high school formal education, he would not be eligible for college level courses. Twenty-two percent indicated they had had enough work of any kind, including studying. Sixteen percent of all respondents did not answer this question.

Almost two-thirds of the respondents who had attended college (63 percent), compared with slightly over one-third (35 percent) of those who had not attended college, indicated lack of transportation was a reason why more persons did not enroll for courses. Also, 42 percent of persons who had attended college, compared to 12 percent of the others, indicated lack of information about what is offered was a reason why more senior citizens did not enroll.

Respondents were asked if they thought more persons would enroll for classes at one of the Montgomery College campuses if a bus picked up senior citizens at their location. Forty-six percent responded affirmatively, 8 percent held a negative view, 32 percent indicated they didn't know, and 14 percent did not reply. Forty-two percent of the senior citizens who had attended college, compared to 47 percent of the others, believed that if a bus picked up senior citizens at their location, more would enroll at one of the college campuses for classes.

Summary

1. Of the community leaders responding to the study, 72 percent had lived in Montgomery County ten years or more, 84 percent had a bachelor's degree and 90 percent had attended a college or university. Over one-third had no past association with Montgomery College, 42 percent had either a child, other relative, or friend who had attended, and 9 percent had a spouse who had attended.

2. Seventeen percent characterized the quality of students at Montgomery College as "better than average," 45 percent believed student quality was "average," 7 percent thought it was "below average," and 31 percent indicated they didn't know how it was.

3. Lower costs than elsewhere, convenience of location, and word that the college offers a good education were cited as reasons why most community leaders thought students attended the college.

4. The largest percentages of community leaders indicated they believed factors of much importance in causing more of their adult acquaintances and friends to enroll in college sponsored community service, non-credit, short-term, special interest classes were (1) more adequate information about special-interest classes for adults (59 percent), and (2) closer cooperation between the college and community organizations in sponsoring special-interest classes for adults (42 percent). The former ranked first in percentage (94 percent) who ascribed some and much importance to it. Second, in terms of the percentage ascribing some and much importance, was improved methods for determining topics or subjects of special interests to adults (91 percent).

5. Nearly 35 percent indicated there were special-interest subjects or topics they believed would serve the educational-cultural interests of residents. Most suggestions were topics in the social sciences, trade-technical, psychology, and business areas.

6. Various suggestions were advanced for college credit programs or courses which should be offered. Several related to agriculture. Real estate was among offerings suggested in business. Included also were journalism and debating. Special education aide, psychiatric aide, and dental hygiene were suggested programs. Suggested among the trade/technical fields were auto-mechanics, building trades, and air conditioning repair.

7. A number of suggestions were given for cooperation between Montgomery College and Community organizations or groups. While some dealt with ways the community could be brought to the college, most related to ways in which the college could go to the community.

8. Among the suggestions offered in public forums for programs and courses were: strong emphasis on quality transfer liberal arts and sciences as the basic core of offerings, English as a second language, Russian and Chinese languages, bio-medical technology, family day-care center worker, licensure and certification of volunteer tutors and educational reading assistants, building trades technology, supervisory training for trade and industrial workers, licensure programs for auto mechanics, T.V.-Radio repair, and air conditioning, heating, and refrigeration specialists, place of trade unions in society, physical fitness for older women, and training of foreign language translators.

9. Forum participants suggested job upgrading or retraining programs for (1) business professionals, and (2) older women desiring return to gainful employment. Consideration was urged for needs of senior citizens and apartment dwellers.

10. Problems cited in using college services were (1) lack of transportation, (2) campuses are poorly marked and difficult to find, (3) lack of knowledge about the college, and (4) lack of communication and understanding between the college and the public. The latter permeated discussions held at each forum.

11. About 80 percent of every ten responding senior citizens who had not attended college and about 60 percent who had gone to college believed senior citizens had special recreational, leisure time, or recreational interests different from people who have not reached retirement age. Fifty-seven percent of all respondents thought senior citizens preferred to have special activities organized especially for them rather than being able to participate with persons of younger age, but 30 percent did not think this was the case.

12. A larger percentage of senior citizens who had not attended college than those who did expressed interest in recreation type activities. However a larger percentage of senior citizens who had attended college than those who didn't expressed interest in leisure time-hobby-avocational type interests and also educational-cultural type interests. Over 4 of every 10 senior citizens responding to the inquiry expressed an interest in each of the three types of interest.

13. Theatre and bridge were named most frequently by senior citizens who named the interests they had.

14. Asked about interests in college level courses, 5 percent of the senior citizens indicated an interest in such courses on a college credit basis, and another 22 percent expressed interest in them on a non-credit basis. Largest percentages of interest were expressed for courses in fine arts, liberal arts, and recreation.

15. Sixteen percent of the senior citizens did not think all the needs and interests of senior citizens were adequately met by activities and programs offered by the College, public schools, or the Recreation Department. A larger percentage of senior citizens who had attended college than the others felt this way.

16. Slightly over one-half (51 percent) of the senior citizens indicated lack of transportation to where programs are offered was a reason why more did not enroll for courses at Montgomery College. Forty-six percent thought more persons would enroll if a bus picked them up at their location.

    Thirty percent indicated a reason for not enrolling in college classes was they did not know what was offered.

CHAPTER VII

STUDY OF PARENTS OF FIFTH GRADE STUDENTS

Introduction

To obtain information about community interest in education at Montgomery College over the next eight to ten years, a questionnaire was distributed to the parents of students presently in the fifth grade at seven elementary schools in the "down county" area of Montgomery County. The specific focus of the questionnaire was on present educational interests of the parents themselves and on long-range plans for education and occupational training for those children who are presently at the fifth grade level. The purpose of the study is to assist Montgomery College in planning a curriculum which will be responsive to the needs and desires of the community.

Barring any major social, economic, or military upheavals, it is believed that the results of this study are indicative of the thinking that prevails in a cross-section of the "down county" section of the community.

Characteristics of Parents Responding

Questionnaires were distributed to 461 fifth grade students in seven elementary schools and 340 parents (73 percent) responded. The seven elementary schools surveyed were Farmland, MacDonald Knolls, Montgomery Knolls, Parkwood, Rock Creek Forest, Somerset, and Wyngate. However, throughout the report, the specific responses have not been identified by school. Number and percentages of responses from the seven schools are presented in Table 42. It can be seen, for example, that 75 responses were received from School #1, and this was a response of 74 percent. Percentage responses among the schools ranged from 61 to 84 percent.

TABLE 42

DISTRIBUTION OF RESPONDENTS BY SCHOOLS

Number and Percent of Responses	School							Totals
	#1	#2	#3	#4	#5	#6	#7	
Number of Responses	75	67	53	48	37	26	34	340
Percent Response	74	80	84	67	73	61	65	73

Approximately one-half the respondents from each school were parents of boys and one-half were parents of girls, with the exception of school six, where 73 percent of the respondents were parents of boys, and 27 percent were parents of girls. The majority of the respondents who filled out the questionnaire, 76 percent, were mothers; 24 percent were fathers. There was no significant variation in this percentage regardless of whether the parents had sons or daughters.

From an analysis of where the parents work, it was found that 40 percent of the fathers work in Montgomery County, and 60 percent work outside. This same percentage did not vary significantly for either male or female children. Of the mothers, 85 percent work in Montgomery County (presumably since many work at home as housewives), and 14 percent work outside the county. In this case, there was a slight variation relating to whether they had sons or daughters. Ten percent of the mothers with sons worked outside the county; whereas 18 percent of the mothers with daughters worked outside.

Also analyzed was the length of time the families had lived in the area served by the elementary school their fifth grader is currently attending. Table 43 shows the results of this part of the analysis.

TABLE 43

LENGTH OF TIME LIVED IN AREA SERVED BY ELEMENTARY SCHOOL CURRENTLY ATTENDED BY FIFTH GRADE CHILD
(In Percent)

Time in Area	Parents with Son in Fifth Grade	Parents with Daughter in Fifth Grade	Total Parents
Less than one year	9	8	8
1-5 years	35	41	38
Over 5 years but less than 10	28	30	29
Over 10 years	28	21	25
Total	100	100	100

Only 8 percent of all the parents who responded have been in the area less than a year. Thirty-eight percent have been there 1-5 years, 29 percent for 5-10 years, and 25 percent over 10 years. As shown in Table 43, this factor did not vary much by the sex of the child, except that a slightly larger share of the families with daughters have lived there 1-5 years and a slightly larger share of families with sons have lived there over 10 years. Over one-half (54 percent) had lived in the area since the child had been in the first grade.

An analysis was made of the educational background of the parents. The results, presented in Table 44, show that 79 percent of all fathers completed college as did 47 percent of all the mothers. While the fathers as a group have more education than the mothers, the majority of mothers, or 77 percent, have had at least some college.

TABLE 44

PERCENT OF PARENTS WITH A CHILD IN THE FIFTH GRADE BY HIGHEST LEVEL OF SCHOOL COMPLETED

Level of School Completed	Father			Mother		
	Son	Daughter	Total	Son	Daughter	Total
Elementary School Graduate	0.6	0.7	0.6	4.0	2.0	3.0
High School Graduate	14.0	7.0	11.0	16.0	25.0	20.0
Some College	9.4	10.0	10.0	33.0	26.0	30.0
College or University Grad.	76.0	82.3	78.9	47.0	47.0	47.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Parents' Educational Expectations for Their Children

The results of the study showed very clearly that parents are in favor of having their children attend a four-year college or university, or to obtain a higher degree. Data in Table 45 show that 92 percent of the parents of males and 87 percent of the parents of females expect their children to finish four or more years of college.

TABLE 45

LEVEL OF EDUCATION PARENTS EXPECT CHILDREN TO COMPLETE IN LIGHT OF CHILD'S SCHOLARSHIP SO FAR

Level of Education Expected to be Completed by Child	Percent*		
	Son	Daughter	Total
High School	7	7	6
Trade, Technical, or Vocational School	6	2	4
Two-Year Community College	6	17	11
Four-Year College or University or Higher Degree	92	87	90

*Totals may add to over 100 percent since parents were given the option of checking one or more educational levels.

In contrast, data show that only 6 percent of the parents expected their child to finish high school, 4 percent expected their child to complete trade school, and 11 percent expected their child to finish a two-year college.

Parents were asked how certain they were that their child would attend college or another type of school after high school graduation. About two-thirds (65.5 percent) definitely planned for their child to continue his education beyond high school, and another 29.2 percent indicated their child would probably do so. Others were uncertain or believed their child would probably not attend school beyond high school. A larger percentage of boy's than girl's parents (71 compared to 59 percent) definitely planned on their child continuing in school beyond high school.

An analysis was made between the amount of education parents expected their child to complete and how certain they were their child would continue in school after high school graduation. Data presented in Table 46 show the level of education parents expect their child to complete, by certainty that the child will continue his education. For example, one can see from Table 46 that, of those males whose parents expect them to complete high school, 33 percent definitely plan on his attending school beyond high school, 42 percent think he will probably continue, and 25 percent are uncertain. The total number of parents who expect sons to complete high school was 12. The rest of Table 46 can be read in the same manner.

TABLE 46

EDUCATIONAL EXPECTATIONS BY CERTAINTY THAT THE CHILD WILL CONTINUE HIS EDUCATION
(In Percent)

Certainty that Child Will Attend College (or Other Type of School after Graduation)	High School		Trade, Tech or Voc Schl or Institute		Two-Year Community College		Four-Year College or University of Higher Ed.	
	Son	Daughter	Son	Daughter	Son	Daughter	Son	Daughter
Definitely Plan on His/Her Attending	33.0	37.5	36.0	25.0	60.0	36.0	75.0	66.0
Probably Attend	42.0	37.5	46.0	50.0	30.0	50.0	22.0	30.0
Uncertain	25.0	25.0	18.0	25.0	10.0	14.0	3.0	3.5
Probably Not Attend	--	--	--	--	--	--	--	0.5
Total Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total Number	12	8	11	4	10	28	162	142

The results indicate that larger percentages of parents who expect their child to complete four or more years of college than other parents definitely plan on their child continuing education after high school graduation. Two-thirds of the parents who expect their daughters to complete this level of schooling, compared to three-fourths of the parents of boys with the same education, definitely plan for their child to continue education beyond high school. An even greater difference in certainty between parents of boys or girls was expressed by parents who expected their child to complete a two-year community college. Sixty percent of the parents of boys, compared to 36 percent of the parents of girls, planning for their child to complete a community college education also definitely planned on the child continuing his education beyond high school. A higher percentage of boys' than girls' parents with plans for their child to complete a trade, technical, or vocational school or institute also definitely planned for the child to continue in school beyond high school. The percentages of girls' parents who were uncertain or thought they might continue in school beyond high school were higher than the percentages of boys' parents. Thus, it can be seen that higher percentages of parents with boys than with girls were more certain that their child would complete their education in a post-secondary educational institution.

Parents' Interest in Child's Job Preparation

Parents were asked to indicate for which type of work they were most interested in their child preparing for job entry. In summary, 80 percent of the respondees want their son or daughter to enter a professional career; slightly over half this group had sons. Thirteen percent had semi-professional objectives for their child; 65 percent of these respondents had daughters. Only three percent of the parents wanted their child to have a skilled trade, and three percent checked none of the alternatives.

To understand the parents' perception of the relationship between educational levels required for different types of jobs expected, a cross-analysis was made relating level of education to ecpected type of job. Table 47 shows the analysis between expected level of education and expected type of job. For example, data in Table 47 show that of those parents who expect their son to prepare for a skilled trade, 80 percent of them expect their child to complete trade, technical or vocational school or institute, 60 percent of them expect them to finish high school, and 20 percent of them expect them to finish four years of college (totals may add to more than 100 percent because parents had the option of indicating more than one educational level). The rest of the table may be read in the same manner. The results are as might be expected. The majority (60-80 percent) of those parents who expect their son or daughter to enter a skilled trade expect their child to complete trade or vocational school or high school. Even more striking were the results of those parents who expect their child to enter a professional career. Ninety-nine percent of parents with sons and 100 percent of parents with daughters who checked professional career as an expectation also checked four-year college or university as an expectation.

Status of Parent's Financial Planning for Child's Education

Parents were asked to indicate the current status of their planning to finance their child's college education and training. The purpose was to determine the relationship between the parents' expectation about the amount of education they plan for their child to complete and the current status of financial planning for it. Thirty percent of the respondents plan to help their child earn his or her way through, 28 percent expect to pay all expenses, and 19 percent have a definite educational savings program. A relatively large share - 13 percent - have no financing plan at all. A small share - 3 percent - plan to leave the matter up to the child, and another three percent had other plans. Five percent expect their child to win a scholarship and a very small proportion or (0.6 percent)expect their child to be educated at the government's expense (e.g., military school).

TABLE 47

EDUCATIONAL EXPECTATIONS OF PARENTS BY THE TYPE OF WORK PARENTS WOULD LIKE CHILD TO ENTER

(In Percent)

Level of Education Expected to be Completed*	Type of Work Parents Would Like Child to Plan to Enter							
	Skilled Trade		Semi-Professional, Tech or Middle Level Bus Occu.		Professional Career		None of These	
	Son	Daughter	Son	Daughter	Son	Daughter	Son	Daughter
High School	60	60	20	7	2	3	50	--
Trade, Technical or Vocational School or Institute	80	60	33	3	.7	--	--	--
Two-Year Community College	--	20	33	62	2	5	--	--
Four-Year College or University or Higher	20	20	73	48	99	100	25	100

*Totals may exceed 100 percent since parents had the option of indicating more than one educational level.

Shown in Table 48 are the percentages of parents who expect their child to complete each level of education by type of financial plan. For example, one can see that approximately eight percent (7.5 percent) of parents with sons whom they expect to go to college have no plan at the present, whereas 33 percent expect to help him earn his way, 28 percent expect to pay all expenses, and 19 percent have a definite educational savings program. The rest of the table may be read in a similar manner. The results are not dramatic, but they show that those with a plan of four years of college for their child plan to pay the child's way or at least help him earn his way. Those with other educational expectations tend more to help the child pay his way.

TABLE 48

DISTRIBUTION OF ALTERNATIVE FINANCE PLANS BY EXPECTED LEVEL OF EDUCATION AND BY SEX OF CHILD

Parents Finance Plans	Percent Distribution							
	High School		Trade, Tech or Voc Sch. or Institute		Two-Year Community College		Four-Year College or University or Higher	
	Son	Daughter	Son	Daughter	Son	Daughter	Son	Daughter
No plan at present	25.0	12.5	10.0	50.0	--	22.0	7.5	16.0
Leaving finances up to child	--	12.5	--	--	10.0	--	4.0	1.0
Have definite educational savings program	25.0	37.5	20.0	25.0	20.0	26.0	19.0	21.0
Will help child earn way	42.0	37.5	60.0	25.0	50.0	37.0	33.0	23.0
Expect child to earn scholarship	--	--	--	--	--	--	6.0	4.0
Expect schooling at government expense (i.e., military sch)	--	--	--	--	--	--	0.5	1.0
Do not expect child to attend school after graduation	--	--	--	--	--	--	--	--
Expect to pay all expenses	8.0	--	10.0	--	20.0	11.0	28.0	31.0
Other	--	--	--	--	--	4.0	2.0	4.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Educational Expectation for Child by Parents' Length of Residence and Level of Education

An effort was made to determine if there was a relationship between the parents' educational expectations of their children and (a) the length of time they had lived in the "down county" area and (b) the educational background of each of the parents. Shown in Table 49 are data on level of education expected for children by parents according to length of time the parents have lived in the area served by their child's present school. Data in Table 49 show, for example, that of those parents who have lived in the area for less than a year, 13 percent expected sons to complete high school, 7 percent expected sons to complete a trade, technical or vocational school or institution, 7 percent expected their son to complete a two-year community college, and 87 percent expected their son to complete a four-year college or university.

TABLE 49

EXPECTED EDUCATION BY LENGTH OF TIME LIVED IN AREA

Expected Education Level	Percent Distribution*							
	Less Than One Year		One to Five Years		Over Five Years		Over Ten Years	
	Son	Daughter	Son	Daughter	Son	Daughter	Son	Daughter
High School	13	15	5	--	8	12	6	--
Trade, Technical, Voc Schl or Institute	7	15	3	1	10	2	6	--
Two-Year Community College	7	15	5	10	2	20	10	26
Four-Year College or Univ. or Higher	87	62	97	94	94	84	90	88

*Totals may add to more than 100 percent since parents could check more than one educational level.

The overall results of this aspect of the study were overwhelmingly in favor of parents expecting students to attend a four-year college or university, regardless of the length of time that the family had lived in the area. As is shown in Table 49, in all but one case, at least 85 percent of the respondents regardless of how long they had lived in the area wanted their child to attend a four-year college or university. The one exception was for people who had lived there less than a year who had a daughter; in this case, only 62 percent of the parents wanted their daughter to attend a four-year college or university. Data suggest that those people who had lived there a shorter period of time, particularly less than one year, have lower educational aspirations than those who have lived there longer.

Our study correlating the educational background of the parent with the educational expectations for the child yielded more distinctive results than the study relating the expectations to the length of time in the area. Data in Table 50 show the educational expectations for the children by the level of education completed by the father and the mother. Observing Table 50, one can see, for example, that of the fathers who completed college or university, three percent of those with sons expected their son to finish high school, three percent expected them to finish a trade, technical or vocational school, four percent expected them to finish a two-year community college, and 96 percent expected them to complete a four-year college or university. The rest of Table 50 may be read in a similar manner. Totals in some instances exceed 100 percent because the parents were allowed to indicate more than one educational expectation level for their child.

Data show that the largest majority of parents who expect their child to complete a four-year college or university come from the group of parents who also had a college or university education. As one views data in Table 50 for those parents with lesser education, that is elementary school, high school, and some college, the distribution of expectations tends to emphasize lower levels of education more than for those parents with a college education.

While there was a definite relationship between the parent's educational background and their expectations for their children, the majority of parents (regardless of their background) expected their children to complete four years or more of a college or university. In only one case did fewer than 50 percent of the parents cite an educational level less than four years of college for their child to complete. In that case a father with an elementary school education expected his daughter to complete a two-year community college. The largest percentages of parents who expected their children, particularly girls, to attend a two-year community college were those with a high school education or some college.

Parents' Expectations that their Fifth Grade Child Would Attend Montgomery College

The question paramount to the interests of Montgomery College is whether or not students expect to attend courses there. Parents were confronted directly by this issue and asked whether or not they expect one or more of their children to attend Montgomery College. Of all the parents responding, 48 percent were uncertain as to whether or not their child would attend Montgomery College, 23 percent thought their children probably would not attend Montgomery College, and 14 percent were certain their children would not attend. Twelve percent thought their child probably would attend, and only eleven parents, or 3 percent, were certain that their child would attend Montgomery College.

TABLE 50

EDUCATIONAL EXPECTATIONS FOR CHILD IN FIFTH GRADE BY LEVEL OF PARENTS' EDUCATION

Expected Level of Education for Child	Level of Education Completed by Parent															
	Elementary School				High School				Some College				4 Yr College/Univ.			
	Mother		Father		Mother		Father		Mother		Father		Mother		Father	
	Son	Daughter	Son	Daughter	Son	Daughter	Son	Daughter	Son	Daughter	Son	Daughter	Son	Daughter	Son	Daughter
High School	33	--	--	--	7	12	8	30	7	7	25	--	5	--	3	4
Trade, Tech or Voc Schl or Institute	33	33	--	--	11	3	13	10	9	5	19	--	1	--	3	1
Two-Year C.C.	--	--	--	100	11	25	13	50	7	24	6	47	3	11	4	12
Four-Year College or Univ. or Higher	50	67	100	--	89	73	83	50	93	83	81	60	96	97	96	95

*Totals may add to more than 100 percent since parents had the option of checking more than one educational level.

Shown in Table 51 are data on parents' certainty that one or more children would attend Montgomery College in comparison with the educational expectations that the parents stated for their children. Looking at Table 51, one can see of those parents who expect their children to enter a two-year community college, only 30 percent of those with sons are certain that their children will go to Montgomery College, and only 4 percent of those with daughters expect their children to go to Montgomery College. The majority of parents with either a son or daughter are uncertain as to whether their child will attend Montgomery College. This uncertainty prevails regardless of what the educational expectation of the parents was for their children. The largest percentages of parents not expecting the child to attend Montgomery College were the groups of parents who expect their children only to complete high school or to attend a four-year college. For the trade, technical, and vocational schools, or the two-year community college program, there is more evidence towards certainty that the child will attend, although no one who was planning to send his daughter to a trade or vocational school indicated that he was certain or even probably certain that the child would attend Montgomery College. An examination was made to determine whether there was any difference in responses about certainty of attending Montgomery College, depending on whether the mother or father had responded. However, no significant differences were found between the mother's response about certainty that the child would enter Montgomery College versus the father's response.

TABLE 51

CERTAINTY THAT ONE OR MORE CHILDREN WOULD ATTEND MONTGOMERY COMMUNITY COLLEGE IN COMPARISON WITH EDUCATIONAL EXPECTATIONS

Parents' Certainty that One or More Children Will Attend Montgomery College	Educational Expectations for Children							
	High School		Trade, Tech/ Vocational School		2-Yr Community College		4-Yr College/ University	
	Son	Daughter	Son	Daughter	Son	Daughter	Son	Daughter
Very Certain	8	25	--	--	30	4	3	4
Probably Attend	8	12.5	27	--	10	31	8	13
Uncertain	50	12.5	73	50	60	54	49	47
Probably Not Attend	17	37.5	--	25	--	4	25	23
Quite Certain Not Attend	17	12.5	--	25	--	7	16	14
Total	100	100	100	100	100	100	100	100

In an attempt to better understand the parents' attitudes towards Montgomery College, parents were asked what association they have had with the College. Numbers and percentages of parents having each type of association are shown in Table 52. The most striking result is that a large majority of the respondents had at best only a remote association with the College. Of the total respondents, 51 percent had no association with the College, and 28 percent knew of friends who took courses offered at the College. Only 13 percent had taken courses (3 percent as a student working for a degree, 4 percent as a special student, and 6 percent as participants in community service, non-credit adult courses). Only 10 percent had children or other relatives who had attended, and 8 percent had some other association. No one had served on a College Advisory Committee. There was almost no difference in the response of parents of sons versus daughters.

TABLE 52

PARENTS' ASSOCIATION WITH MONTGOMERY COMMUNITY COLLEGE

Type of Association	Number*	Percent of Total Respondents*
As a student working on a degree	10	3
As a special student not working on a degree	12	4
Took one or more community service non-credit adult courses	21	6
One or more children attended	16	5
Relatives other than children attended	16	5
Served on a College Advisory Committee	0	0
Have friends who took courses offered by the College	95	28
None	175	51
Other	26	8

*May exceed 100 percent of total respondents since more than one association could be checked.

An analysis was made to determine if the parents' association with Montgomery College related to their certainty that their child would attend, and results are shown in Table 53. For instance, of those parents very certain that their child would attend Montgomery College, 9 percent had been a student working there on a degree, 9 percent had been a special student, and 18 percent had taken a community service course. Eighteen percent had one or more children who had attended, 9 percent had other relatives who had attended, and 45 percent had friends who had taken courses. Only 27 percent had had no association with the College. The rest of Table 53 may be read in this manner.

In contrast to 27 percent of parents certain that their child would attend Montgomery College, 60 percent certain their child would not attend had had no association with the College. Data show that the parents' certainty that their child will attend Montgomery College is definitely greater for those who have been involved with the College, either as a students themselves or through a relative who was a student, than for others.

TABLE 53

RELATIONSHIP BETWEEN PARENTS' ASSOCIATION WITH MONTGOMERY COLLEGE AND THEIR CERTAINTY THAT THEIR CHILD WILL ATTEND

Type of Parents' Association With Montgomery College	Percent by Certainty Child Will Attend				
	Very Certain	Probably Will	Un-Certain	Probably Not	Quite Certain Not
As a student working on a degree	9	5	3	3	--
As a special student not working on a degree	9	3	6	--	--
Took one or more community service adult courses	18	18	6	3	2
One or more children attended	18	13	3	3	--
Relatives other than children attended	9	10	6	--	2
Served on a College Advisory Committee	--	--	--	--	--
Have friends who took courses	45	36	28	25	26
None	27	26	57	59	60
Other reason	--	10	6	12	9

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*Totals may exceed 100 percent since parents could check more than one association.

To further an understanding of parents' attitudes towards Montgomery College, they were asked why they would and would not encourage their child to attend Montgomery College. Reasons by percent for and against such encouragement are shown by percent response in Table 54 for fathers and mothers. Looking at Table 54, one can see that 44 percent of the respondents indicated that a convenient location was a reason for encouraging their child, 41 percent indicated low cost as a reason, and 24 percent indicated that the college offers a good education, about one-fifth, (21 percent) indicated small classes as a reason, and 17 percent indicated that faculty, staff, and administrators take special interest. Another 16 percent indicated that technical and semi-professional programs are offered. Of lesser importance were reasons that the scholarship is presently not too good, that friends might enroll there, or other reasons. Twenty-four percent of the respondents indicated that they are not encouraging their child to attend. The rest of Table 54 may be read in a similar way. Responses were similar between fathers and mothers.

Of the reasons cited for not encouraging a child to attend Montgomery College, 38 percent replied that the child might not be interested, 29 percent want their child to attend a better college, 26 percent say that the program needed is not available, 23 percent want their child to get away from home, and another 23 percent replied that there was inadequate information about Montgomery College. Reasons of lesser importance included lack of transportation, expense, inconvenient location, or other reasons. Only 4 percent will encourage their child to attend Montgomery College.

Responses from parents of boys and girls were similar concerning reasons why they would or would not encourage their child to attend Montgomery College, with several exceptions. A higher percentage of boys' than girls' parents (27 compared to 19 percent) cited inadequate information about Montgomery College as a reason they might not encourage their child to attend. Also a higher percentage of parents with boys (34 percent) than with girls (24 percent) indicated they wanted their child to attend a better college. A larger percentage of parents with girls (45 percent) than with boys (33 percent) indicated the child might not be interested as a reason they might not encourage attendance.

TABLE 54

REASONS FOR AND AGAINST ENCOURAGING CHILD TO ATTEND MONTGOMERY COLLEGE BY PERCENT*

Reasons	Mothers	Fathers	Total
For			
Convenient location	40	53	44
Low cost	38	51	41
Offers good education	22	32	24
Small classes	23	17	21
Faculty staff, & administrators take special interest	17	14	17
Technical & semi-professional programs offered	17	11	16
Child's scholarship presently not too good	3	2	3
Friends will enroll there	.8	--	.6
Other	3	6	4
Would not encourage child to attend	25	22	24
Against			
Child might not be interested	37	42	38
Want child to attend better college	30	25	29
Program needed not available	26	23	26
Want child to get away from home	24	23	23
Inadequate information about M.C.	22	24	23
Lack of transportation	3	10	4
Too expensive	2	7	3
Campuses not conveniently located	.4	4	1
Other	8	10	8
Will encourage child to attend	5	2	4

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*Totals may add to more than 100 percent since parents could check more than one reason for or against.

Interests of Parents in Further Education at Montgomery College

Since the student body at a community college is comprised not only of college-age students but also of adults either seeking a college degree or taking extra courses out of personal interest, efforts were made to elicit from adults in the "down county" area their interests in studying at Montgomery College. Questions were asked about whether any adult in their household was interested in studying at Montgomery College, about their knowledge of the services offered, and about their interest in specific courses.

The response of those interested in studying was significant, particularly for mothers. Shown in Table 55 are the percentages of responses about adults who might be interested, according to the person who responded (i.e.,mother or father). Regardless of who responded, about 60 percent replied that no one was interested. However, 32 percent of the mothers replied that they were interested, and 28 percent of the fathers replied that their wives would be interested. Thus, overall, 31 percent, or 104 mothers, were interested in further education or occupational training. While the results show that only 9 percent of the fathers were interested, the difference between the percent of mothers who said their husbands would be interested (6 percent) and the percent of fathers who said they would be interested (20 percent) suggests that possibly more fathers might be interested if asked directly themselves. Regardless of which parent responded, only a small percentage (4 percent) indicated there was another adult person in the household besides parents who would be interested in further education or training at Montgomery College. In total, 150 adults were found to be interested in courses, according to the results of the inquiry. It is interesting to recall from an earlier section of this chapter that the mothers had less education than the fathers, so it is not surprising that mothers particularly are interested in studying at a local community college. This is because they can attend college classes near their place of residence.

TABLE 55

ADULTS INTERESTED IN EDUCATION AT MONTGOMERY COLLEGE

Interested Household Member	Respondent to Questionnaire					
	Mother		Father		Total	
	Number	Percent	Number	Percent	Number	Percent
Father	15	6	17	20	32	9
Mother	81	32	23	28	104	31
Other adult	10	4	4	5	14	4
None	148	57	54	65	202	59

Efforts were made to determine interest in various types of courses and services. Respondents were asked to indicate from several types of assistance the ones that would be of interest to one or more adults in their household. Forty-one percent indicated no adult was interested in any type of assistance listed, but between 11 percent and 19 percent were interested in each of the following: refresher mathematics, reading improvement, individual sport instruction, individual music lessons, job or career counseling, and refresher secretarial skills.

TABLE 56

TYPES OF ASSISTANCE OF INTEREST TO ADULTS IN HOUSEHOLDS OF THE RESPONDENTS

Types of Assistance	Percent*
Refresher Mathematics	12
Reading Improvement	12
Individual Sport Instruction	14
Individual Music Lessons	19
Job or Career Counseling	11
Refresher Secretarial Skills	12
None of These	41

*Totals may exceed 100 percent since more than one course could be checked.

Fields of Interest for Further Study by Adults

Parents responding were asked to indicate from among offerings currently provided or planned by Montgomery College those in which an adult member of the household would have interest for study. Although the fields listed from which selections were made are those provided by the College or planned, this information was not made available to the respondent. Shown in Table 57 is the incidence with which greatest interest was expressed for fathers, mothers and other adults. The numbers are significant only to the extent to which they denote concentrations of interest among respondents for fields of academic credit study offered or planned by the Montgomery College. Art, business administration, teacher education, and music, in that order, were fields of reported interest to the largest numbers of persons.

If one assumed that the parents of children in the fifth grade responding to the study were representative of all parents of children in the "down county" area in the fifth grade and that the parents of children in the fifth grade were representative of all parents in the "down county" area of children several grades below and above that grade level, then the numbers of fathers and/or mothers shown interested in any given field divided by 340 times the numbers of all mothers and/or fathers of children in a grade span such as 3 to 7 would give an approximation of the total numbers who might be expected to be interested in that particular field.

This would also be the case for fields in which interest was expressed by three or fewer persons shown in Table 58. Fields in which no person was reported interested were:

- Cartography
- Pre-Engineering
- Pre-Optometry
- Pre-Pharmacy
- Corrections
- Fire Science
- Recreation Therapy

Parents who were not interested in any of the fields of study listed but who had interests in other fields were to name the field of their interest. Fields named are shown below with the number of times mentioned over once shown in parentheses.

TABLE 57

FIELDS REPORTED OF INTEREST FOR STUDY BY ADULTS IN HOUSEHOLDS OF RESPONDENTS

Fields of Interest to Greatest Number of Adults (4 to 17 Adults Interested)	Number of Persons Interested			
	Father	Mother	Other Adult	Totals
Accounting	5	3	--	8
Advertising Art	1	8	--	9
Business Administration	4	6	2	12
General Business Management	4	2	2	8
Fashion Merchandising	--	6	--	6
Secretarial	--	4	--	4
Teacher Education	4	6	1	11
Instructional Aide	3	2	--	5
Art	1	16	--	17
Music	3	6	--	10
Liberal Arts	1	8	--	9
Science	--	4	--	4
Home Economics	--	5	--	5
Nursing	--	8	1	9
Computer Science & Technology	5	2	2	9
Data Processing Management	--	3	1	4
Social Service Aide	1	8	--	9
Transportation, Travel, Tourism	--	8	--	8
Other Courses	5	15	3	23

TABLE 58

FIELDS REPORTED OF INTEREST FOR STUDY BY ADULTS IN HOUSEHOLDS OF RESPONDENTS

Fields of Interest to 1-3 Adults	Number of Persons Interested			
	Father	Mother	Other Adult	Totals
Marketing	--	3	--	3
Community Planning	2	--	--	2
Geography	--	1	--	1
Automobile Mechanic	1	--	1	2
Engineering Technology	--	--	2	2
Construction Technology	3	--	--	3
Building Code Inspection	3	--	--	3
Broadcasting Technology	1	--	--	1
Instrumental Repair & Piano Tuning	2	--	--	2
Theatre Arts	--	1	1	2
Animal Technology	--	2	--	2
Fashion Design	--	3	--	3
Pre-Law	--	2	--	2
Pre-Dentistry	--	2	--	2
Pre-Medicine	1	1	--	2
Medical Laboratory Technician	--	2	--	2
Dental Laboratory Technician	--	1	--	1
Dental Assisting	--	1	--	1
Medical (Office) Assistant	--	2	--	2
Mental Health Assoc.	--	2	--	2
Radiological Technology	--	1	--	1
Research Library, Medical Aide	--	1	--	1
Research Library Patent Aide	--	--	1	1
Environmental Studies	1	1	--	2
Food Service Management	1	--	--	1
Hotel/Motel Management	1	--	--	1
Criminal Justice	--	1	--	1
Legal Technology (Legal Aide)	--	1	--	1
Printing Technology	--	1	--	1
Recreation Leadership	1	2	--	3

Mother
History (2)
Languages (2)
Chemistry
Psychology-Behavioral
Literature
Journalism-creative writing
Animal Science
Horticulture
Medical Laboratory Technology
Public Health Nursing
Teacher Education
Library Aide
Modern Dance
Crafts
Interior Decorating
Real Estate (3)

Father
Real Estate Broker
Auto mechanics-but not for licensing
Photography
Communications Engineering
Astronomy
Executive Management
Seminar series
Psychology-Behavioral
English as a second Language

Other Adult
Building construction
Electrician
English as a second Language

Parents were asked to indicate their interest in 34 non-credit courses. These results are shown in Table 59, in decreasing order of selection. The highest response came from sixty respondents who indicated they were not interested in any of the courses suggested. Of the courses which were of interest, painting was the most popular with 25 respondents, then speed reading (19), photography (17),practical consumership topics (16), appliance repair (13), and interior design (13). Applied psychology, French, and secretarial skill refresher instruction were cited next in order of interest. Ceramics and management principles and skills followed. If parents were interested in types of non-credit courses not included among those shown in Table 59, they were asked to indicate in what topic they would be interested. Responses are shown below,with the number of times suggested in parentheses if mentioned more than once.

Mother
Pottery (2)
Weaving
Clothing Repair
Antiques
Real Estate Principles
Stock Market Investment (2)
Taxes
Modern History
Conversational Spanish
Library Science
Auto Repair
Automobile Awareness for Women
Music
Yoga

Father
Auto repair (3)
Sailing
Fencing
Computer programming
Guitar
Furniture refinishing
Navigation
Real Estate (2)
Plumbing repair
Improvement of County Educational System

Other Adult
English ESL
Art History, History
Italian
Quilting

TABLE 59

INTEREST IN NON-CREDIT COURSES

Non-Credit Fields of Interest	Number of People Interested			
	Father	Mother	Other Adult	Totals
Painting	3	22	--	25
Speed Reading	6	12	1	19
Photography	10	7	--	17
Practical Consumership Topics	11	5	--	16
Appliance Repair	10	2	1	13
Interior Design	--	12	1	13
Applied Psychology	3	8	--	11
French	3	8	--	11
Secretarial Skill Refresher	--	9	2	11
Ceramics	3	7	--	10
Management Principals & Skills	7	3	--	10
Fabric & Apparel Construction	--	9	--	9
Art Appreciation	2	6	1	9
Creative Writing	--	5	2	7
Self Defense	4	3	--	7
Contemporary Literature	1	5	--	6
Indoor Gardening	1	5	--	6
How to Study	2	3	--	5
Oral Communications	2	3	--	5
Hebrew	1	3	--	4
Typewriting	--	2	2	4
Psychology of Women	--	3	1	4
Dance Therapy	--	3	--	3
Literary Criticism	1	2	--	3
Landscape Design	3	--	--	3
Spanish	1	1	--	2
Heating, Refrigeration, & Air-conditioning	2	--	--	2
Technical Report Writing	1	1	--	2
Horse Management	1	1	--	2
Sight Singing	--	2	--	2
Public Opinion Media	--	1	--	1
Contemporary Drama	--	--	1	1
Principles of Supervision	--	--	--	--
Fashion Awareness	--	--	--	--
None of the Above	30	28	2	60

A large majority of the respondents (93 percent) indicated they did not know that if a group of adults with a common interest wanted to engage in the study of some topic of their choice, the Community Services Office of Montgomery College would supply the instructor and materials, provided a suitable accommodation could be found. There was little variation in this percentage regardless of whether the mother or the father was responding. Also, the majority of the respondents (71 percent) did not know whether there are types of educational-cultural services or activities which are needed by adults in the area but which presently are not available. Twenty-two percent replied that there are none needed, but 7 percent replied that there are some such services or activities needed. The response was about the same from mothers as well as fathers. Respondents who indicated there were some types of additional educational-cultural services needed were asked to name them. These suggestions were as follows:

Auto Repair
Auto Care
Auto Mechanic Course for Women
Home Mechanics
Short Courses in Tourism
Underwater Photography
Old-time Fiddling & Picking
Group Orchestra
Consumerism
Black History
Law (2)
Human Relations
Mental Health
Community Development
Tennis Lessons
Studio Art for Beginners

Courses for "do-it-yourself" home and automobile repair; nothing major, but the little jobs like fixing plumbing that leaks, tuning engines, etc.

Individual short-term courses on home buying, law, and investments rather than the broad course topic of practical consumership

Area studies: departments specialized in studies on other continents and cultures such as Latin America, Asia, Africa, Europe

Arts & crafts (daytime) - Lecture series featuring well-known personalities on various topics-politics-art-literature, etc.-quality drama-music-art shows

At least semi-annual "give & take" sessions, with the Board of Education and representatives of the Superintendent's Office

Summary

1. About 40 percent of the fathers and 85 percent of the mothers responding to this study worked in Montgomery County. A relatively small percentage, 54 percent had lived in the present elementary school area since their child had entered the first grade. A relatively high percentage of fathers (79 percent) had completed college, and 77 percent of the mothers had completed some college.

2. A relatively high percentage of parents, 92 percent of the parents of boys and 87 percent of the parents of girls, expect their child to complete four or more years of college. About 11 percent expect their child to complete a community college education. Two-thirds definitely planned on their child continuing his education beyond high school, and another 29 percent indicated the child would probably continue his education. Larger percentages of parents with boys with girls definitely plan on their child continuing in school after high school.

3. A larger percentage of parents with boys rather than girls expect their child to continue education beyond high school. Larger percentages of parents who expect their child to complete four or more years of college than other parents definitely plan on their child continuing in school after high school graduation. Larger percent with girls than boys are uncertain about whether the child will continue his education beyond high-school level.

4. Eighty percent of the parents responding indicated they wanted their child to prepare for a professional career. Parents expectation for type of work they expect their child will follow coincided relatively well with the level of education they plan for the child to complete.

5. Although parent's educational aspiration for their child was not associated with length of time lived in the County, it was found positively related to the educational level attained by parents.

6. Only about one-fifth (19 percent) of all parents indicated they had a definite savings plan for financing their child's education; 28 percent expected to pay all expenses; while one-third expected to help the child earn his way.

7. About 15 percent of all the parents indicated one or more of their children would probably (12 percent) or definitely (3 percent) attend Montgomery College; 48 percent were uncertain, and others indicated their child would probably or definitely not attend there.

8. A majority of parents had had no type of association with Montgomery College. A larger percentage of parents with some previous association with Montgomery College than others were more certain one or more of their children would attend there.

9. The three reasons indicated by the largest percentages of parents why they would encourage their child to attend Montgomery College were (1) convenience of location, (2) low cost, and (3) a good education is offered. The three reasons indicated by the largest percentages of parents as to why they might not encourage their child to attend there were (1) child might not be interested, (2) want child to attend a better college, and (3) program needed not available.

10. Over one-fifth (23 percent) of the parents who might not encourage their child to attend Montgomery College indicated that they had inadequate information about the college.

11. Thirty-one percent of the mothers and 9 percent of the fathers were found to be interested in further education or occupational training at Montgomery College. About 4 percent of the respondents indicated there was some other adult in the household who would also be interested.

12. Interest was expressed by parents in the following types of assistance: (1) individual music lessons (19 percent), (2) individual sport instruction (14 percent), (3) refresher mathematics (12 percent), (4) reading improvement (12 percent), (5) refresher secretarial skills (12 percent), and (6) job or career counseling (11 percent). About 41 percent indicated they had no interest in any assistance of these types.

13. The largest incidence of interest for formal academic credit fields of study in descending order were: (1) art, (2) business administration, (3) teacher education, (4) music, (5) advertising art, liberal arts, nursing, computer science technology or social service aide, and (6) general business management or transportation (travel, tourism, etc.).

14. Greater incidence of interest in non-credit adult education classes was found for: (1) painting, (2) speed reading, (3) photography, (4) practical consumership topics, (5) appliance repair, (6) interior design, (7) applied psychology, (8) French, and (9) secretarial skill refresher courses.

CHAPTER VIII

INFORMATION FROM HIGH SCHOOL SENIORS

Introduction

One important source of information in assessing the post-high school educational needs of an area is a study of the plans, aspirations, and interests of youth, particularly high school seniors. Many of the same influences and forces which affect the formulation of plans at this age level are the same ones that influence the extent to which a senior is likely to follow them. It is important to ascertain the extent to which youth are interested in educational and training programs beyond high school and types of programs in which they are interested.

In this study, three "down county" high schools were selected by the Department of Research, Montgomery County Public Schools, to be representative of schools in the area. An attempt was made during November 1973 to contact all seniors in these three selected high schools. Of the 1,345 seniors enrolled, 1,051 (78 percent) responded to the study. Questionnaires prepared for the purpose were provided each of the three schools along with a set of directions designed to standardize the procedures of administering the questionnaires. The three cooperating schools, Einstein, Woodward, and Northwood, are distributed geographically and are thought to serve as a cross section of "down county" residents. Results of responses from 506 boys and 545 girls at these schools are presented below.

Characteristics of Respondents

Most (90 percent) of the seniors were age 17 or less, but 10 percent were older. Seventeen percent lived with someone other than both their father and mother. About 77 percent had lived in the area over six years or since junior high school. Another 13 percent had lived in the area 3-5 years, and the rest had lived in the area a shorter time. While these data reveal mobility, to the extent that people had moved into the county, they do not reveal out-county migration. The data reveal a relatively stable population of people with high school senior level children. Seventy percent of the seniors responding reported earning part of the money they spend while attending high school by working on a part-time job during the school year.

Nearly one-half (48 percent) of the seniors were enrolled in a college preparatory curriculum, 12 percent (mostly girls) were in a commercial or business curriculum, and 29 percent were in a general curriculum. Two percent (mostly boys) were in a shop or industrial arts curriculum, and 0.4 percent were in an agriculture curriculum. One percent were in some other curriculum such as the diversified occupations curriculum. Forty-one percent believed their grades placed them in the upper third of their class, 43 percent believed they were in the middle third, and 15 percent thought they were in the lower third academically.

Seniors' Plans for Further Education

Of all seniors responding 5.4 percent definitely did not include continuing their education somewhere after graduation, and 4.9 percent indicated future plans would probably not include continuing their education somewhere after graduation. Nearly a fourth, 24 percent, thought future plans would probably include continuing their education somewhere, but 58 percent indicated their plans would definitely include continuing their education somewhere. Nearly 8 percent (7.6 percent) indicated they did not know if future plans would include more education. Shown in Table 60 are the responses of seniors from each of the high schools to the inquiry about whether future plans would include further education.

TABLE 60

PERCENT OF SENIORS BY PLAN FOR CONTINUING EDUCATION AFTER HIGH SCHOOL GRADUATION

Plan	School Number			Total
	One	Two	Three	
No	6.2	2.2	6.8	5.4
Probably Not	6.2	2.6	5.4	4.9
Probably Yes	24.6	21.6	24.0	23.6
Yes	56.2	67.3	54.7	58.4
Don't Know	6.8	6.3	9.1	7.6

Observing Table 60 one can see, for example, that 6.2 percent of the seniors in school number one, compared to 2.2 percent in school number two, and 6.8 percent in school number three definitely did not include continuing their education in future plans. Other data are to be read likewise. One can see interesting variances among seniors in the three schools in terms of whether they believed future plans would include continuing their education.

An analysis was made to determine the percentages of seniors by curriculum according to plan for continuing their education. These data shown in Table 61 reveal the percentage of seniors in each curriculum who expect to continue their schooling. Observing the data one can see, for example, that of the boys enrolled in the college preparatory curriculum, one percent had plans that definitely or probably would not include further education, while 98 percent had plans that definitely or probably would include more education. One percent didn't know if plans would include more education. Other data in Table 61 are to be read likewise.

TABLE 61

PERCENT OF SENIORS ENROLLED IN EACH CURRICULUM BY PLAN FOR COLLEGE

Curriculum	Plan for Continuing Education					
	No or Probably Not		Yes or Probably So		Don't Know	
	Male	Female	Male	Female	Male	Female
College Preparatory	1	1	98	97	1	2
Commercial-Business	14	27	72	28	14	15
Shop or I.A.	32	50	63	50	5	--
General	17	15	70	76	13	9
Homemaking	100	9	--	54	--	36
Agriculture	50	--	50	--	--	--
Other	26	20	61	72	13	8
No Response	10	33	50	22	40	44

It can be seen that 70 and 76 percent, respectively, of the boys and girls enrolled in the general curriculum have plans which will probably or definitely include more education. Nearly three-fourths of the boys (72 percent) and 28 percent of the girls enrolled in the commercial or business curriculum had plans which would probably or definitely include more education. These data indicate that many of the seniors in other than the college preparatory curriculum will be among those seeking entry to college level programs. Not shown in Table 61 are data which indicate that, of seniors with definite plans for college, 89 percent were enrolled in either the college preparatory or general curricula. Of seniors whose future plans probably include further education, 73 percent were enrolled in either a college preparatory or general curriculum.

Another analysis of responses was made to determine the extent to which seniors with different reported levels of academic achievement had plans for continuing their education. The data are shown in Table 62. It can be

TABLE 62

PERCENT OF SENIORS BY REPORTED ACADEMIC LEVEL ACCORDING TO PLAN FOR EDUCATION

Plan for Continued Education	Reported Academic Achievement Level					
	Upper Third		Middle Third		Lower Third	
	Male	Female	Male	Female	Male	Female
No	2	1	7	8	15	7
Probably Not	1	2	4	9	7	11
Probably Yes	15	13	31	29	30	35
Yes	81	81	51	46	30	25
Don't Know	1	3	7	8	18	22

seen, for example, that of boys reporting their grade average in the upper third of their class, 2 percent had no plans for further education, 1 percent thought future plans would probably not include more education, 15 percent indicated future plans would probably include more education, and 81 percent indicated future plans would definitely include further education. Other data are to be read in similar fashion. Observing the data one can ascertain that of senior boys reporting their academic achievement to be in the upper, middle, and lower thirds, respectively, 3, 11, and 22 percent had plans that definitely or probably would not include further education, while this was the case for 3, 17, and 18 percent respectively, of the girls. One can observe also that 60 percent of the boys and girls reported in the lower third academically had plans that would probably or definitely include further education, as did 82 and 75 percent of boys and girls reporting their grades placed them in the middle third of the class. These findings indicate that a relatively small percentage of seniors reported in the upper third of their class academically do not plan to continue their education, but a relatively high percentage in the lower third of their class do expect to continue their schooling. The latter finding points up the possible need for remedial and developmental educational opportunities if success is to be attained in college level work.

Where Seniors Plan to Continue Their Education

Seniors whose plans would probably or definitely include attending school somewhere sometime in the future were asked where they expected to attend. Data shown in Table 63 indicate where seniors expected to attend school sometime after graduation from high school. About 30 percent

TABLE 63

PERCENT OF SENIORS BY SCHOOL THEY EXPECT TO ATTEND

School	Male	Female	Total
University of Maryland	19	17	18
Montgomery College	17	20	19
State College in Maryland	1	5	3
Two-Year College in Maryland-Outside Montgomery County	.6	.4	.5
Private Four-Year College in Maryland	1	1	1
College, University or School in the District of Columbia	1	1	1
Other School Elsewhere	31	30	31
Don't Know	14	10	12
No Response	14	15	15

of the seniors expect to continue their education in a school outside Maryland and the District of Columbia. Nearly a fifth, 19 percent, expect to attend Montgomery College, and 18 percent indicated they would attend the University of Maryland. Less than 1 percent expected to attend a two-year college outside Montgomery County in Maryland. Only 1 percent expected to attend a college, university or school in the District of Columbia or to attend a private four-year college in Maryland.

Data were analyzed to determine the academic characteristics of seniors who planned to attend each of the different educational institutions for further study. Shown in Table 64 under each level of reported academic achievement are the percentages of seniors who indicated where they planned to continue their education. One can observe that as the level of reported academic achievement increases so do the percentages of seniors who plan to attend either the University of Maryland or a school outside of Maryland or the District of Columbia. Conversely, as the academic achievement level decreases, the percentages of seniors expecting to attend Montgomery College increases, especially among the boys. Percentages of seniors who gave no response as to the college they would attend increased as reported achievement level decreased. The largest percent of seniors expecting to attend Montgomery College were reported in the lower and middle levels of academic achievement.

TABLE 64

PERCENT OF SENIORS BY ACADEMIC RANK ACCORDING TO SCHOOL THEY EXPECT TO ATTEND

	Upper Third		Middle Third		Lower Third	
School	Male	Female	Male	Female	Male	Female
University of Maryland	26	23	18	15	6	1
Montgomery College	7	12	22	28	31	22
State College in Maryland	2	5	.5	4	1	6
Two-Year College in Maryland Outside Montgomery County	1	--	.5	1	--	--
Private Four-Year College in Maryland	2	1	1	1	--	--
College, University, or School in the District of Columbia	2	1	.5	1	4	1
Other School Elsewhere	44	42	30	22	8	21
Don't Know	12	10	13	9	21	15
No Response	4	6	15	19	29	33

Another analysis of data revealed that of boys who worked on a part-time job during the school year, 81 percent had plans which definitely or probably would include further education compared to 93 percent who did not work. Of the working girls, 79 percent expected to continue their education compared to 86 percent who did not work part-time while attending high school. Thus, it can be seen that larger percentages of seniors who do not work part-time while attending high school plan on continuing their education than those who work part-time. This probably reflects the general family income status.

To determine if seniors whose future plans included continuing their education somewhere expected to delay attendance, seniors were asked what they expected to do the next year after high school graduation. Whereas, 82 percent indicated future plans would definitely or probably include continuing their education, 68 percent indicated they planned to attend a school, college, or university the next year after high school graduation. Fourteen percent expected to work on a job. Slightly over 4 percent expected to travel and see some things and about the same percentage didn't know what they would do. Nearly 2 percent expected to enter an apprenticeship and learn a trade, and 1 percent intended to enter military service. Others expected to do other things. Thus, approximately 14 percent expected to delay their schooling.

Fields of Interest for Study

A listing of programs offered and planned by Montgomery College was presented to seniors. They were asked to indicate from this listing their first, second, and third choices, if any, of fields in which they had the most interest for further study. Responses are presented for each choice in Table 65 for respondents of the three selected "down county" high schools. Also shown are the "prospective" total number of seniors who would be interested in each of the fields of study as first choice, assuming the same percent of seniors in other "down county" area high schools, and non-respondents in the schools contacted would have been interested as the ones who responded. This assumption cannot be entirely valid, because the schools were selected judgmentally to be representative rather than being selected on a statistically random basis. Presented also is the total number of seniors who might have selected each field of study as first, second, or third choice based on this assumption.

Observing the data, one can see that interest in liberal arts and sciences was indicated by the largest single group of seniors. When this indication of interest is combined with interests expressed in pre-professional programs in teacher education, law, pre-medical, and general educational studies (all of which are essentially liberal arts or sciences) this area is by far the most predominent with slightly over a fourth of the seniors selecting it. Other fields of greatest interest were as follows: (1) business administration, (2) secretarial science, (3) art, (4) accounting, (5) criminal justice, (6) nursing, (7) automobile mechanics, (8) music, (9) physical education, and (10) environmental studies.

TABLE 65

NUMBER OF SENIORS INTERESTED IN VARIOUS FIELDS FOR FURTHER STUDY

Field of Study	First Choice	Second Choice	Third Choice	Total	Prospective* First Choice	Prospective* Total Interest
Accounting	34	27	18	79	171	397
Advertising Art	19	18	12	49	95	246
Business Administration	53	38	24	115	266	577
General Business Management	10	21	22	53	50	266
Marketing	1	4	4	9	5	45
Fashion Merchandising	11	9	9	29	55	145
Computer Science and Technology	5	15	11	31	25	155
Computer Operator	6	12	4	22	30	110
Computer Technician	3	5	9	17	15	85
Data Processing Management	1	3	9	13	5	65
Secretarial	50	30	25	105	251	527
Food Service Management	8	8	4	20	40	100
Hotel/Motel Management	10	12	8	30	50	150
Printing Technology	4	4	7	15	20	75
Cartography (Map Making)	1	4	2	7	5	35
Community Planning	2	1	2	5	10	25
Criminal Justice	30	37	31	98	150	492
Corrections	1	4	7	12	5	60
Environmental Studies	20	25	27	72	100	361
Fire Science	3	2	1	6	15	30
Geography	2	7	5	14	10	70
Legal Technology (Legal Aide)	2	8	7	17	10	85
Recreation Leadership	9	14	7	30	45	150
Social Service Aide	17	28	21	66	85	331
Transportation, Travel & Tourism	18	12	21	51	90	256
Recreation Therapy	3	8	5	16	15	80
Home Economics	10	22	7	39	50	196
Fashion Design	11	10	17	38	55	191
Teacher Education (Elem., Secondary)	48	32	21	101	241	507
Physical Education	26	30	20	76	130	381
Music Education (Teaching)	9	7	10	26	45	130
Music (Professional)	27	24	26	77	136	387
Art	39	28	23	90	196	451
Theatre (Dramatic Arts)	15	24	14	53	75	266
Broadcasting Technology	7	4	11	22	35	110
Instrumental Repair & Piano Tuning	--	1	1	2	--	10
Automobile Mechanics	28	12	17	57	140	286
Animal Technology	19	29	16	64	95	321
Dental Assisting	14	15	9	38	70	191
Dental Laboratory Technology	3	2	3	8	15	40
Medical (office) Assistant	10	7	7	24	50	120
Medical Laboratory Technician	3	6	3	12	15	60
Mental Health Associate	8	6	7	21	40	105
Medical Technology	1	5	2	8	5	40
Nursing	30	11	13	54	150	271
Radiological (X-Ray) Technology	3	3	6	12	15	60
Research Library Medical Aide	1	--	--	1	5	5
Pre-Dentistry	8	9	2	19	40	95
Pre-Medicine	43	21	14	78	216	391

TABLE 65 (Continued)

NUMBERS OF SENIORS INTERESTED IN VARIOUS FIELDS FOR FURTHER STUDY

					Prospective*	
Field of Study	First Choice	Second Choice	Third Choice	Total	First Choice	Total Interest
Pre-Optometry	2	--	2	4	10	20
Pre-Pharmacy	3	2	6	11	15	55
Pre-Law	47	39	21	107	236	537
Pre-Engineering	6	7	5	18	30	90
Construction Technology	6	8	2	16	30	80
Building Code Inspection	--	--	1	1	--	5
Engineering Technology (Architecture)	11	7	11	29	55	145
Engineering Technology (Civil)	1	6	2	9	5	45
Engineering Technology (Electronic)	15	9	8	32	75	160
Engineering Technology (General)	5	3	4	12	25	60
Engineering Technology (Mechanical)	14	14	8	36	70	181
Research Library Patent Aide	--	1	--	1	--	5
Liberal Arts and Science	57	41	29	127	286	637
General Education (humanities/social science or math/science	43	31	31	105	216	527
None of these	109	26	36	171	547	858
No response	46	192	332	567	231	2846

*Assumes that the same proportion of all "down county" area seniors would have been interested as those who responded to the study.

Of all seniors responding, 365 (34.8 percent) indicated there was a field of study not included in the listing in which they would have been interested. Each was asked to write in the name of the field of study in which they would be interested, if it did not appear in the listing. Fields not now offered by Montgomery College are indicated by an asterisk in the listing below.

A. Agriculture

Forestry(16)*
Horticulture(10)*
Agriculture(8)*
Equestrianship(8)*
Veterinary Medicine(7)*
Wildlife Management(5)*
Conservation(4)*
Animal Technology(2)*
Park Administration(2)*
Agricultural Engineering*
Landscaping*

B. Art

Art
Commercial Art*
Ceramics
Architecture*
Interior Decoration & Design(8)*
Textile Design*
Textiles*
Multi-Media Craftsmanship*

C. Business

Business
Business Administration(2)
Fashion Merchandising
Telephone Switchboard Operation(2)*
Real Estate
Secretarial(4)
Salesmanship(3)
Telephone Company Management*

D. Communication Arts

Communications(5)*
Journalism(12)
Telecasting
Radio Broadcasting
Television Production

E. Fine Arts

Dance(9)*
Modeling(4)*
Voice(2)

F. Health Related

Physical Therapy(8)*
Dental Hygiene(4)*
Occupational Therapy(3)*
Speech Therapy(2)*
Dental Assisting
Pharmacy
Health Services*
Music Therapy

G. Liberal Arts and Sciences

Economics(2)
Economic-statistics
Sociology(5)
History(10)
Political Science(5)
Bible-Theology(2)*
International Relations(2)*
Russian Studies*
Various Histories & Cultures
Anthropology(4)
Social Science(2)
Archeology
Consumer Economics
Philosophy(3)
Mathematics(3)
Languages(11)
English(3)
Pre-Law
Biological Science(7)
Marine Biology(12)*
Chemistry(3)
Chemical Engineering*
Bio-Chemistry(2)
Meteorology(2)
Physics(2)
Engineering Physics
Zoology(2)
Entomology(2)*
Astronomy
Aerodynamics*
Geology
Environmental Science
Oceanography(7)*
Energy Research*
Engineering
Science
Petro-Engineering*

H. Psychology

Psychology(20)
Para-Psychology(2)*
Developmental Psychology(3)
Child Psychology
Family Relationships*

I. Service Related

Fire Science
Social Work(4)
Special Education(15)*
Primary Childhood Education(3)
Food Preparation & Management
Recreation
Cosmetology(3)*
Law Enforcement(2)
Youth Work*
Instructional Materials Aide*
Air Line Stewardess(4)*
Air Transportation*

J. Physical Education

Sports(3)

K. Technical, Trade and Industrial

Automotive Mechanics(2)*
Auto Body(3)
Motorcycle Mechanics(2)*
Aviation(7)*
Automobile Design(2)*
Gunsmithing*
Woodworking(2)*
Construction(4)
Carpentry(5)*
Cabinet Making*
Drafting
Printing
Air Conditioning & Refrigeration*
Graphic Arts(2)
Photography(11)
Photolithograph
Electronics
Recording Engineer*
Plumbing*
Electricity(3)*
Carpeting*

Observation of the responses shown above compared to the listing in Table 63 reveals that some seniors were not aware of Montgomery College offerings. Typically, seniors do not know what fields of study may be classed as liberal arts and sciences. Therefore, the many suggestions in this area may stem from both a lack of this knowledge and, in addition, an unawareness that many of these subjects are offered by Montgomery College just as they are offered by four-year colleges. Some seniors who indicated an interest in a field of study not listed failed to name the field of their greatest interest and some indicated more than one field. For these reasons, the number of suggestions do not equal 365, the number of seniors who indicated they were interested in some other field of study.

A third of all the seniors indicated the field of greatest interest for further study was offered at Montgomery College, 12 percent indicated it was not offered at Montgomery College, and 48 percent did not know. About 6.5 percent did not respond to this question or indicated they were not interested in further study. The fact that nearly one-half of the seniors did not know if the field of their greatest interest for further study was offered at Montgomery College would seem to indicate a major gap in their information. Undoubtedly, some don't care, some know only about other institutions in which they are interested, others may have conditioned attitudes about the college and don't assimilate accurate information, and still others don't intend to continue their education and aren't interested.

Long Range Occupational Aspirations

Seniors were asked to name their first preference for the kind of a job they looked forward to having ten years from now. While the validity of responses to this type of question is questionable, responses are indicative of aspiration level and broad areas of interest. Research regarding standardized interest tests shows considerable validity of the latter. Numbers and percentages of responses by seniors to this inquiry are shown in Table 66. One can see, for example, that 191 males (38 percent) and 182 females (33 percent), or a total of 35 percent of all seniors, indicated the job of their preference which they looked forward to having ten years from now was a professional one. Other data are to be read likewise. While the individual professions are not shown separately, most interests were in medicine, engineering, law, and teaching.

Fifteen percent of all seniors did not give a response to this question and a number expressed their uncertainty by the comment, "How do I know?" Six percent indicated they didn't know what their preference would be. Other than the professions in descending order, the largest percentages of girls expressed interest in: (1) office-clerical-secretarial jobs, (2) art, (3) nursing, (4) business management, (5) laboratory technology, and (6) homemaking. In descending order, boys expressed interest in jobs other than professional as: (1) business management, (2) law enforcement, (3) entertainment performer, (4) agriculture, (5) mechanics, and (6) running their own business.

Information About Colleges in General and Montgomery College

Seniors were asked how well informed they felt they were about different colleges, requirements for entering them, and the costs involved. Twenty-one percent indicated they were very well informed and could make a decision about post-high school plans without difficulty. On the other, hand 26 percent felt they had too little information on which to base a decision about plans after graduation, and 11 percent were not interested. Forty-one percent indicated they had a fair amount of information but needed more to make a definite decision on plans after graduation. Approximately two-thirds (67.4 percent) of the seniors indicated they needed more information about different colleges to make a decision about plans after graduation. An analysis of responses revealed that higher percentages of seniors in the college preparatory and general curricula believed they had more information than did seniors in other curricula.

Much information was obtained by seniors about Montgomery College from friends and relatives (59 percent), written materials about the college (58 percent), other high school students (50 percent), high school personnel (41 percent), and representatives of Montgomery College (23 percent). Two percent had obtained much information from other sources, primarily from a child or spouse. Data from this inquiry

TABLE 66

PERCENT AND NUMBER OF SENIORS BY LONG RANGE OCCUPATIONAL ASPIRATION

Type of Job	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
Professional other than nursing (4 or more years of college)	191	38	182	33	373	35
Nursing	1	.2	27	5	28	3
Military Service	3	.6	1	.2	4	.4
Office-clerical-secretarial	--	--	52	9	52	5
Housewife	--	--	22	.4	22	2
Electricity/electronics	4	.8	--	--	4	.4
Selling, salesman	3	.6	--	--	3	.3
Building trades	1	.2	--	--	1	.1
Mechanics	15	3	1	.2	16	1
Vet. Medicine	3	.6	5	1	8	.8
Other agriculture	17	3	17	3	34	3
Airline pilot	6	1	1	.2	7	.7
Art (interior decorating, artist, commercial art)	9	2	35	6	44	4
Run own business	18	3	5	1	23	2
Laboratory technician (medical, dental)	--	--	24	4	24	2
Cosmetology	--	--	2	.4	2	.2
Dancer, model, entertainer	19	4	14	3	33	3
Law enforcement	19	4	6	1	25	2
Data processing	5	1	3	.6	8	.8
Business mgmt. (adm., accounting)	45	9	26	5	71	7
Theatre, Drama	2	.4	9	2	11	1
Human services	1	.2	--	--	1	.1
Miscellaneous*	19	4	19	3	38	3
No Response	100	20	58	11	158	15
Don't Know	25	5	36	7	61	6

*Miscellaneous includes the following: Airline stewardess(13), Printer(3), Construction(3), Travel agent(2), Plumber(2), Cabinet maker(2), Telephone operator(2), Energy-use technician(2), Architectural technology, Transportation, Textiles, Firefighter, Carpenter, Labor union organizer, Draftsman, Airline pilot, and Mountain man.

are presented in Table 67 according to reported academic level. Observation reveals, for example, that 44 percent of the boys and 61 percent of the girls reported in the upper academic third indicated they had received much information about Montgomery College from high school personnel; whereas 57 and 70 percent, respectively, had much information from other high school students. Other data are to be read likewise. Higher percentages of seniors reported in the upper academic third (than in other academic levels) reported receiving much information from each source. A second finding of interest is that the lower the reported academic level, the smaller was the percent of seniors who reported receiving much information from high school staff, especially the boys.

TABLE 6[illegible]

PERCENT OF SENIORS BY ACADEMIC LEVEL AND SOURCE OF MUCH INFORMATION ABOUT MONTGOMERY COLLEGE

Source of Much Importance	Upper		Middle		Lower		All Seniors
	Male	Female	Male	Female	Male	Female	
High school personnel	44	61	33	43	20	43	41
Other high school students	57	70	37	47	44	44	50
Friends or relatives	58	78	49	63	50	57	59
Written materials	58	76	51	58	54	54	58
Montgomery College representatives	32	40	3	29	19	25	23
Other	3	2	2	2	3	3	2

Reasons Seniors Believe are Important Regarding Attendance at Montgomery College

Asked about the reasons of most importance why some friends and classmates would enroll at Montgomery College, seniors indicated various reasons. The percentages of seniors indicating each reason are shown in Table 68 by whether they worked part-time while attending high school. Seniors believe that the major reason some of their friends and classmates would enroll at Montgomery College is a low high school average. The reason of second importance was low cost, followed by convenience of campus location. Slightly higher percentages of working than non-working seniors indicated the convenient location of college campuses as a reason, and slightly lower percentages of working than non-working seniors indicated low grade average as a reason. A slightly higher percentage of working than non-working boys indicated low cost as a reason; the converse was true for girls. Working boys who probably pay part of their expenses and non-working girls who might not otherwise be able to attend cited low cost as a predominant reason.

Seniors were asked reasons of importance why more of their friends and classmates might not attend Montgomery College. These data are presented in Table 69 by whether seniors were working part-time. Observing the data, one can see that the reason indicated by the largest percentage (66 percent) of seniors why more classmates and friends might not attend Montgomery College was because they want to attend a better college. Second in importance was the desire to live away from home, especially among girls. The third in order of importance was that the program or courses wanted were not offered at Montgomery College. An analysis was made to determine the association between reported academic grade level of seniors and factors they believed were important as to why more of their friends and classmates did not attend Montgomery College. Largest percentages of seniors reported in the upper and middle academic levels, and boys in the lower third, cited the same three reasons. Girls in the lower third agreed with the first two reasons, but they cited lack of interest as the reason third in order.

TABLE 68

PERCENT OF SENIORS BY REASONS WHY THEY THINK FRIENDS ATTEND MONTGOMERY COLLEGE

Reason for Attendance	Percent						
	Males			Females			Totals
	Working	Not Working	Total	Working	Not Working	Total	Male & Female
Low Cost	22	19	21	23	26	24	22
Convenient Location of Campuses	16	15	16	20	14	18	17
Offers a Good Education	5	4	5	6	9	7	6
Friends Will Enroll There	1	3	1	3	4	3	2
Low High School Grade Average	35	39	35	23	24	23	29
College Staff Takes Special Interest in Students	1	1	1	1	1	1	1
Desire to Live at Home	2	1	2	3	7	4	3
Programs Which Prepare for Job Entry	2	2	2	4	3	3	3
Desire to Work While Attending College	2	3	2	3	1	2	2
Other	9	9	9	9	7	8	8

One can ascertain from data in Table 69 that higher percentages of non-working than working boys and girls indicated they believed desire to attend a better college was a major reason why more of their friends and classmates did not attend Montgomery College. Slightly higher percentages of non-working than working respondents believed advice not to attend and

TABLE 69

PERCENT OF SENIORS BY REASONS WHY THEY THINK FRIENDS MIGHT NOT ATTEND MONTGOMERY COLLEGE

Reason for Non-Attendance	Males			Females			Totals
	Working	Not Working	Total	Working	Not Working	Total	Male & Female
Expensive	4	3	4	3	6	4	4
Lack of Transportation	8	7	7	10	7	9	8
Desire to Live Away from Home	53	52	51	68	71	68	60
Program or Courses Wanted Not Offered	37	33	34	41	50	43	39
Lack Information About Montgomery College	15	12	13	10	19	12	13
Want to Attend a Better College	66	76	67	62	73	64	66
Advised by Others Not to Attend	18	20	19	20	23	21	20
Not Interested in Continuing in School	31	23	29	34	27	32	30
Inconvenient Location of Campuses	4	0	3	1	3	1	2
Types of Persons Who go There	13	20	14	11	16	13	14
Other	8	7	7	7	7	7	7

types of persons who go to Montgomery College were reasons. Higher percentages of working than non-working seniors believed lack of interest in further education was a reason. While slightly over one-half of the working and non-working boys believed desire to get away from home was a reason why more friends and classmates did not attend Montgomery College, a higher percentage of non-working than working girls (71 and 68 percent) believed desire to live away from home was a reason. Desire to live away from home was the reason given by the highest percentage of girls, while desire to attend a better college was the reason given by the highest percentage of boys.

Factors Associated With Plans for Further Education

Ninety-three percent of the seniors indicated they believed their parents either insisted or expected them to continue their education after high school graduation or wanted them to do so. This finding reflects a relatively high level of perceived parental encouragement for youth to continue their education. An analysis was made to determine the relationship between seniors' perceived parental attitude about continuing education beyond high school and whether future plans included further education. These data are presented in Table 70.

TABLE 70

PERCEPTION OF PARENTS' ATTITUDE ACCORDING TO PERCENT OF SENIORS BY PLAN FOR EDUCATION

Plans for Continuing Education	Insist or Expect Me To		Want Me to Continue		Indifferent	
	Male	Female	Male	Female	Male	Female
No	1	--	7	5	47	28
Probably Not	1	.5	4	8	13	20
Probably Yes	17	20	32	24	13	28
Yes	79	77	47	52	20	8
Don't Know	11	3	9	10	7	16
Totals	44	34	49	59	3	5

Under each perceived parental attitude are shown the percentages of seniors according to whether future plans included continuing their education somewhere. Observing the data, one can determine that higher percentages of seniors who perceived that their parents insisted, expected, or wanted them to continue their education had plans for continuing than seniors who thought their parents did not care one way or the other. Conversely, a higher percentage of seniors perceived their parents to be indifferent and had plans that definitely did not include continuing their education. Only three seniors indicated parents did not want them to continue, and none reported that parents would not allow them to continue.

About the same percentage of seniors planned to continue their education regardless of whether they lived with both parents or were from a broken home. In fact, a slightly higher percentage of seniors living with just their father had plans for continuing their education, while the same percentage living with just their mother had plans for continuing, as did youth living with both parents. This finding is at variance with findings in many other areas of the country where consistently smaller percentages of youth from broken homes expect to continue their education than do others.

Larger percentages of seniors enrolled in a college preparatory curriculum than others have plans that will definitely or probably include further education. There was a direct relationship between reported academic level in class and whether future plans included continuing in school. The higher the academic level reported, the larger were the percentages whose plans included continuing in school and vice versa. A higher percentage of seniors who had lived in the area over five years than others (83 compared to 74 percent) had future plans that included continuing in school and a smaller percentage had plans that probably or definitely would not include continuing (9 compared to 16 percent). About the same percentage of both groups (13 percent) did not know if plans would include continuing their education.

Seniors were asked to select from several situations the one that best described their financial situation in meeting expenses of attending the college of their choice. These data, shown in Table 71, were analyzed according to definite future plans as to whether they would include further education. Shown also are the reported financial situations for all seniors included in the study. Data in Table 71 are to be read as follows: 63 and 88 percent of the boys and girls, respectively, whose future plans definitely did not include further education indicated they do not plan to attend college. Three percent of the boys who definitely had no plans for college did not think they would have a financial problem, and 6 percent indicated each of three other financial situations; 16 percent did not respond. Eight percent of the girls who definitely had no plan for college indicated they would be able to pay a small part of expenses and 4 percent did not respond. Other data are to be read likewise.

Observing the data, one can see that about 40 percent of seniors whose plans definitely included further education (42 and 38 percent of boys and girls, respectively), and a third of all seniors did not think they would have a financial problem. Nearly 40 percent of seniors with definite plans for continuing their education, and about one-third of all seniors thought they would be able to meet most expenses but would need some part-time work. Two percent with definite plans for college attendance and 3 percent of all seniors did not think they could manage to meet financial requirements. Others, about 17 percent of seniors with definite plans for attendance and 15 percent of all seniors thought they would be able to pay a small part of expenses and would need a scholarship or student loan. Boys' and girls' responses on financial conditions were about the same. A higher percentage of boys with definite plans for college attendance than others did not think they would have a financial problem. The highest percentages of girls with plans that would probably or definitely include further education, and boys whose future plans probably would include further education indicated they would be able to meet most expenses but would need some part-time work. About two-thirds of all seniors, and approximately 80 percent of seniors with definite plans indicated no major financial problem.

TABLE 71

PERCENT OF SENIORS BY PLAN FOR FURTHER EDUCATION AND THEIR REPORTED FINANCIAL SITUATION

Financial Situation Pertaining to College Costs	Plan for Continuing Education						
	Definitely No		Definitely Yes		All Seniors		
	Male	Female	Male	Female	Male	Female	Total
Don't Plan to Attend College	63	88	1	1	8	12	10
Don't Think I will have a Financial Problem	3	--	42	38	36	31	33
Will be Able to Meet Most Expenses but will Need Some Part-Time Work	6	--	38	39	35	34	34
Will be able to Pay a Small Part of Expenses and will Need a Scholarship or Student Loan	6	8	16	18	14	16	15
Don't Think I can Manage to Meet Financial Requirements	6	--	2	2	3	3	3
No Response	16	4	2	2	5	3	4

Seniors whose future plans probably or definitely did not include continuing their education after graduation were asked to indicate the reasons that applied to them. These data are shown in Table 72 for boys and girls, and percentages shown are calculated on the basis of the number of all seniors responding. Observing the data one can see that the reason given by the largest percentages of boys and girls was desire to work and make money. This reason was cited by 65 percent of seniors whose plans did not include further education. Reasons in descending order of selection were: (1) being tired of school (10 percent), (2) inability to make good enough grades, (3) desire to get married, too expensive, and waste of time.

When asked if they would change their mind about continuing their schooling if more money were available, 9.5 percent of the seniors whose plans did not include further education said "yes," and 37.6 percent said "maybe." This was a total of 89 seniors, or 8 percent of all seniors contacted whose plans might change if more money were available.

TABLE 72

PERCENT OF SENIORS WITHOUT PLANS FOR FURTHER SCHOOL ATTENDANCE BY REASON

Reason for Not Planning on More School	Boys	Girls	Both Boys and Girls
Too expensive, can't afford it	3	4	4
Want to work and make money	9	14	12
Tired of school; had enough	8	11	10
Want to get married	2	5	4
Parent's don't want me to	.4	.2	.3
People who don't go to college get ahead just the same	3	2	3
Waste of time	4	3	4
Can't make good enough grades	6	6	6
Poor health	.2	.7	.5
Other	2	3	3

Educational Interests of Seniors Whose Plans Do Not Include Further School Attendance

Seniors whose future plans definitely or probably would not include further school attendance were asked to indicate in which of several other types of education they would have greatest interest. Percentages of responses are shown in Table 73. Viewing the data, one can ascertain that about one-half the girls with no plans for continuing in school somewhere would not be interested in any of the types of education listed. Slightly under a fifth of these girls indicated an interest in on-the-job training opportunities and about 16 percent indicated an interest in learning a trade by being an apprentice. Nearly 41 percent of the boys whose plans did not include continuing in school indicated an interest in an apprenticeship to learn a trade, and slightly under a fifth of them expressed interest in on-the-job training. Whereas only about one-half the girls were interested in one of the types of non-formal further education listed, nearly 80 percent of the boys expressed such an interest.

TABLE 73

PERCENT OF SENIORS WHOSE PLANS DID NOT INCLUDE FURTHER SCHOOLING BY INTEREST IN TYPES OF NON-FORMAL EDUCATION

Types of Education	Boys	Girls	Boys and Girls
Work as paid apprentice to learn a trade	40.8	16.4	27.6
Post-graduate high school work at night	6.4	7.3	6.9
Military service training	6.4	5.4	5.9
On-the-job training with a firm	19.3	19.1	19.2
Correspondence study	4.3	2.7	3.4
None of the above	22.6	49.1	36.9

Summary

1. A relatively high percentage of seniors responding (77 percent) had lived in the area since junior high school. Seven out of ten were working part-time while in school. Nearly one-half (48 percent) were enrolled in a college preparatory curriculum, 29 percent were in a general curriculum, and the other 23 percent were distributed among other curricula.

2. About one-tenth of all seniors indicated future plans would definitely or probably not include continuing their education somewhere after high school graduation, and another 7.6 percent "did not know" if their plans would include more school. Slightly over 58 percent indicated plans definitely would include more schooling, and nearly 24 percent indicated plans would probably include such activity. About 14 percent of all seniors expected to delay further schooling until sometime after the year following graduation.

3. As might be expected, the largest percentages of seniors planning on further education were enrolled in the college preparatory and general curricula and reported they were in the upper third of their class academically. While relatively small percentages of seniors reported to be in the upper academic third of their class did not expect to continue their schooling, relatively high percentages of seniors reported in the lower academic third had plans for continuing school.

4. Slightly over 41 percent of all seniors expected to continue their schooling in Maryland, and 19 percent expected to enroll at Montgomery College. Nearly one-third (32 percent) expected to attend college out of Maryland, with only .1 percent expecting to attend in the District of Columbia. The largest percentages of seniors reported in the upper academic third planned to attend the University of Maryland or a college outside the state. While some seniors reported in the top third planned to attend Montgomery College, the largest percentages planning on enrolling there were reported to be in the middle and lower thirds of their classes.

5. The field of greatest interest for further study was liberal arts and sciences (including pre-professional law, teacher education, medicine, and general education). In descending order of interest expressed, other fields of most interest were: (1) business administration, (2) secretarial science, (3) art, (4) accounting, (5) criminal justice, (6) nursing, (7) automobile mechanics, (8) music, (9) physical education, and (10) environmental studies.

6. Over one-third of the seniors (34.8 percent) indicated there was a field of study not included in a listing of programs offered and planned at Montgomery College in which they would have been interested. A number of programs and courses now offered by Montgomery College were among those in which seniors expressed interest. A third of all seniors indicated the field of their greatest interest was offered at Montgomery College, 12 percent believed it was not, and 48 percent didn't know whether it was offered there.

7. The largest percentage of seniors (35 percent) expressed long-range occupational interest in one of the professions other than nursing. In descending order, the largest percent of girls expressed occupational interests in the broad areas of: (1) office-clerical, secretarial, (2) art, (3) nursing, (4) business management, (5) laboratory technology, and (6) homemaking. The largest percent of boys expressed occupational interests in the broad areas of: (1) business management, (2) law enforcement, (3) entertainer-performer, (4) agriculture, (5) mechanics--largely automobile, and (6) running their own business.

8. About two-thirds (67.4 percent) of all seniors indicated they needed more information about different colleges to make a decision about plans after graduation. Those in the college preparatory and general curricula believed

they had more information than others. Friends and relatives, written materials, other high school students, high school staff, and college representatives, in this order, were indicated as sources of much information about Montgomery College.

9. Reasons seniors think are most important as to why some of their friends/classmates attend Montgomery College were: (1) having a low high school average (29 percent), (2) low cost (22 percent), and (3) convenient location of campuses (17 percent). Reasons given as to why more friends/classmates do not attend Montgomery College were: (1) desire to attend a better college (66 percent), (2) desire to live away from home (60 percent), (3) program or courses wanted are not offered (39 percent), (4) not interested in continuing in school (30 percent), and (5) advised by others not to attend (20 percent).

10. A relatively high level of parental encouragement for seniors to continue in school was detected from perceptions of seniors about how their parents felt on the matter.

11. Seniors' plans for continuing their education were found to be positively related to reported academic status, perceived parental attitudes, length of residential tenure in the area, perceived financial status, and being enrolled in a college preparatory curriculum. No relationship was found between seniors' plans and whether they lived with both parents or in a broken home.

12. Seniors whose plans definitely or probably did not include continuing in school gave as their most important reasons: (1) desire to work and make money, (2) tired of school, and (3) inability to make good enough grades. While about one-half of the girls not planning on more schooling indicated they would be interested in one of several types of non-formal education, nearly 80 percent of boys expressed such an interest. Greatest interests were expressed in either an apprenticeship or on-the-job training.

13. Nearly one-half (47 percent) of seniors whose plans did not include more schooling indicated definitely (9.5 percent) or maybe (37.6 percent) they would change their mind about continuing their schooling if more money were available. Those who would change their mind constituted 8 percent of all seniors responding to the study.

CHAPTER IX

STUDY OF HIGH SCHOOL GRADUATES

Introduction

In addition to obtaining information from seniors enrolled during the 1973-74 school year at Einstein, Northwood, and Woodward high schools, an attempt was made to obtain information from a statistically random sampling of 1972 graduates of those schools. With assistance of the Montgomery County Public School Office of Research, a 20 percent statistically random sample was drawn, and last known addresses were obtained from records of the respective schools. In November 1973, a cover letter, signed by an administrative official of the Montgomery County Public Schools--accompanied by a printed questionnaire prepared for the purpose, and a stamped return envelope addressed to the Office of Research for the public schools--was mailed by Montgomery College to each graduate in the sample. Three weeks after the initial mailing, a follow-up letter and questionnaire were mailed to persons from whom no response had been received. A system of coding each questionnaire enabled persons implementing the study to know which graduates had responded.

Letters inviting participation in the study and questionnaires were mailed to 401 persons. Usable responses were received from 82 men and 95 women (177 graduates) for a return of 44 percent. Another 8 percent responded too late for inclusion. Presented in this chapter are the results of that inquiry.

Characteristics of Respondents

Over three-fourths (77 percent) of the respondents lived in Montgomery County, 12 percent lived elsewhere in Maryland, and 11 percent lived outside of Maryland. Women graduates constituted 54 percent of the respondents. Eighty-one percent of the responding graduates were attending school full-time, 3 percent were attending school part-time, and 16 percent were not in school.

Only 2 percent indicated they had received no type of training or schooling after graduation from high school. One percent had attended a trade or technical school, and 84 percent had attended a college or university; about the same percentages of men and women had attended each type of school. Over one-fifth (23 percent) had received on-the-job training at a place where they were employed. One percent of the men, and no women, had attended a business college. Two percent of the men and 1 percent of the women had taken an adult education course at a local high school. One percent of the women had enrolled for a correspondence course, and 4 percent of the men had received training in the military service. Two percent indicated they had received some other type of training or education. Since some persons had received more than one type of training or schooling, percentages sum to more than 100 percent.

Most graduates (63 percent) had completed a college preparatory high school curriculum, but 28 percent had finished a general curriculum. Four percent (mostly women) had graduated from a business/commercial curriculum, 3 percent from a fine arts curriculum,0.6 percent (all men) from a technical or shop curriculum, and 1 percent had completed some other curriculum such as diversified occupations. No respondents had studied agriculture or home economics in high school.

Where Graduates Attended School

Graduates who continued in school after high school graduation were asked where they enrolled. These data are shown in Table 74. One can see that 29 percent of the men had attended the University of Maryland, 26 percent had enrolled at Montgomery College, 23 percent had enrolled in school outside Maryland or the District of Columbia and others had attended elsewhere. Other data in Table 74 are to be read likewise. Slightly over one-fourth of the men respondents had enrolled at Montgomery College,as had slightly under one-third of the women. About the same total percentage of respondents had attended the University of Maryland and Montgomery College. Slightly over a fifth of both men and women had gone to a school out of Maryland or the District of Columbia. A larger proportion of men (8 percent) than women (1 percent) had attended an institution in the District of Columbia. Three percent of men and women had attended a state college in Maryland, and a total of 5 percent had attended a private four-year college in Maryland outside Montgomery County.

TABLE 74

PERCENT OF MEN AND WOMEN GRADUATES BY SCHOOL ATTENDED

School Attended	Men	Women	All Graduates
University of Maryland	29	28	28
Montgomery College	26	31	29
State College in Maryland	3	3	3
Two-Year College in Maryland Outside Montgomery County	--	--	--
Private four-year college in Maryland	4	6	5
College, University, or School in the District of Columbia	8	1	4
Other School Elsewhere	23	22	22
Does not apply	9	9	9

An analysis between high school curriculum completed and place where graduates continued their education showed that 39 percent of the men and women who completed a college preparatory curriculum attended the University of Maryland, while 18 percent attended Montgomery College and 43 percent went elsewhere. Of those who completed a general curriculum in high school, 10 percent attended the University of Maryland, but 45 percent had enrolled at Montgomery College. Looked at another way, 83 percent of the men respondents attending the University of Maryland had completed a high school college preparatory curriculum and 17 percent had completed a general curriculum, while 48 percent attending Montgomery College had been in each of the two curricula. Of the women attending the University of Maryland, 92 percent had completed a college preparatory curriculum and 5 percent had graduated from a general curriculum, while 34 percent of women respondents enrolling in Montgomery College had completed a college preparatory curriculum, 41 percent had graduated from a general curriculum, 17 percent had been in a business/commercial curriculum, and the rest in other curricula. Thus, it can be seen that among respondents higher percentages attending Montgomery College than the University had completed their high school work in some curriculum other than the college preparatory curriculum.

Graduates' Opinions as to Why More Persons Did Not Enroll at Montgomery College

Graduates were asked to indicate how important each of several factors were as to why more of their friends and acquaintances did not enroll near home at Montgomery College. Responses are summarized in Table 75 by percentages of men and women according to degree of importance ascribed to each reason. Lack of money was considered by 72 percent of the men as being of no importance, by 21 percent as of some importance, and by 4 percent as being of much importance. Percentages of women citing lack of money as of none, some, and much importance were, respectively, 69,22, and 6 percent; percentages of all respondents were, respectively, 71, 21, and 5 percent. The rest of the data in Table 75 are to be read likewise. For ease of interpretation, opposite each reason, the largest percentage of men and women indicating a degree of importance is underlined.

Observing the data, one can see that the largest percentages of all graduates indicated that reasons of no importance were: (1) students at Montgomery College are unfriendly (84 percent), (2) location of campuses is inconvenient (73 percent), (3) lack of money (71 percent), (4) inadequate information (66 percent), and (5) lack of transportation (62 percent). Desire for a better college was cited by the largest percentage of respondents as a reason of much importance. Largest percentages of respondents indicated reasons having some importance were: (1) advice of others (58 percent), (2) program wanted not offered (50 percent), (3) desire to live away from home (47 percent), and (4) lack of interest in continued education (45 percent).

TABLE 75

PERCENT OF GRADUATES BY IMPORTANCE OF REASONS FOR NON-ATTENDANCE AT MONTGOMERY COLLEGE

Reason	No Importance			Some Importance			Much Importance		
	Men	Women	Total	Men	Women	Total	Men	Women	Total
Lack of money	72*	69	71	21*	22	21	4*	6	5
Wanted a better college	10	5	7	39	35	37	49	59	54
Wanted to live away from home	6	2	4	60	37	47	32	59	46
Inadequate information about Montgomery Col.	63	67	66	27	28	28	6	2	4
Advice of others	29	26	28	52	63	58	16	8	12
Had no interest in continued education	34	32	33	43	[illegible]	45	16	21	19
Students at MC are unfriendly	88	81	84	5	12	8	2	3	3
Program wanted not offered	23	11	16	45	55	50	29	33	31
Lack of transportation	66	58	62	27	35	31	4	5	5
Campus location not convenient	76	72	73	17	23	20	4	3	3

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*Difference between sum of each triad and 100 is due to non-response; in this case 3 percent.

Some noteworthy differences in responses between men and women appeared. While the largest percentages of both men and women indicated that campus location and lack of transportation were reasons of no importance, larger percentages of women than men indicated these reasons were of some importance--over a third of the women cited lack of transportation as being of some importance. Larger percentages of the women than men (88 compared to 74 percent) indicated that the program wanted was not offered as a reason of some or much importance. A larger percentage of women than men indicated advice of others was a reason of some importance, and a larger percentage of men than women indicated desire for a better college was of much importance. While desire to live away from home was cited by a larger percentage of men (60 percent) than women (37 percent) as being of some importance, a larger percentage of women (59 percent) than men (49 percent) believed this reason was of much importance. This reason ranked first in having some or much importance among both men and women; second was the desire for a better college.

An analysis was made of those who had no type of education beyond high school and those who had attended a college or university to determine if views differed about the importance of various reasons why more of their friends and classmates had not attended Montgomery College. These data are presented in Table 76 by percent of graduates with each type of education who believed each of several reasons was of no, some,

TABLE 76

IMPORTANCE OF REASONS FOR FRIENDS' NON-ATTENDANCE AT MONTGOMERY COLLEGE BY PERCENT OF GRADUATES ACCORDING TO TYPE OF ADDITIONAL EDUCATION

Importance of Reasons for Friends Not Attending Montgomery College	No Additional Education			College & University		
	None	Some	Much	None	Some	Much
Lack of money	13	6	12	17	7	3
Wanted a better college	6	13	12	1	12	34
Wanted to live away from home	--	19	13	1	16	28
Inadequate information about MC	19	6	--	16	9	3
Advice of others	6	19	--	6	20	8
Had no interest in continued education	6	13	25	--	--	--
Students at MC are unfriendly	19	7	--	20	3	2
Program wanted not offered	6	7	25	4	17	18
Lack of transportation	12	7	13	16	10	2
Location of campus not convenient	13	13	--	18	6	2

or much importance. For example, one can observe that of graduates with no education beyond high school who believed reasons given were of no importance, 13 percent indicated lack of money, 6 percent indicated desire for a better college, and 19 percent indicated desire to live away from home. The rest of the data are to be read in similar fashion. Observing the results, one can see that reasons having much importance for the largest percent of graduates with no education beyond high school were: (1) advice of others, and (2) the program wanted was not available. Reasons having much importance for the largest percent of graduates who attended a college or university were: (1) desire for a better college, (2) desire to live away from home, and (3) program wanted was not offered. Largest percentages of graduates who had attended college cited reasons of some importance as: (1) advice of others, (2) program wanted not offered, and (3) desire to live away from home. The largest percentages of those not continuing their schooling cited: (1) desire to live away from home, (2) advice of others, and (3) no interest or desire for a better college as reasons of some importance.

Educational and Occupational Aspirations of Graduates

Graduates were asked for what major purpose they would be interested in further education or training at the time of the study. Four percent indicated they would not be interested. Five percent would be interested to improve in their present job, and 22 percent would be interested in preparing for a new job. Thirty-nine percent want to finish the program they are now pursuing, and 31 percent were interested for self-improvement. A larger percentage of women than men expressed interest in preparing for a new job, but a larger percentage of men than women desired to improve in their present job.

An analysis of where graduates responding went to college, and the purpose for which they would be interested in further education revealed that of the men who attended the University of Maryland purposes were: for self-improvement (43 percent), to prepare for a new job (16 percent), and to finish the program they are now in (39 percent). Purposes given by men who had enrolled at Montgomery College were: to improve in the present job (19 percent), for self-improvement (26 percent), to prepare for a new job (19 percent), and to finish the program they are now in (37 percent). The same pattern of responses existed for women. These data point up the greater emphasis on job improvement and preparation of graduates enrolled at Montgomery College compared to those who attended the University of Maryland.

Types of work graduates expect to be doing ten years from now are shown in Table 77 by percent of response. Two percent of the respondents expected to work at a skilled trade, which usually requires high school and/or trade school (and sometimes community college work) plus a period of several years apprenticeship. Fourteen percent expected to work at a middle manpower level, which usually requires two years of college or technical education and training. Sixty-eight percent of the men, and 71 percent of the women, expected to follow a professional career, which ordinarily requires graduation from a four-year college, and frequently an advanced professional degree. About one-eighth (12 percent) indicated they did not know what kind of work they planned to do ten years later, and 3 percent (primarily women) expected to work at something else.

TABLE 77

PERCENT OF GRADUATES BY OCCUPATIONAL ASPIRATION

Type of Work	Men	Women	All Graduates
Skilled trade	2	1	2
Semi-professional, technical, or middle level business occupation	13	14	14
Professional career	68	71	69
None of these	1	5	3
Don't know	15	9	12

An analysis between type of education beyond high school and type of work graduates expect to be doing ten years hence revealed that, of the boys who had gone to college, 75 percent expected to pursue a professional career. Fifteen percent did not know what type of work they planned to do, 13 percent expected to work in a middle manpower level job, and 1 percent expected to be in a skilled trade. Of the girls who had gone to college, 78 percent expected to follow a professional career, but 13 percent expected to work in a middle manpower level job. One percent expected to have a skilled trade, and 7 percent didn't know what they planned to do.

Graduates were asked to name the type of job they look forward to having ten years from now. This was an attempt to learn the occupational aspirations of respondents on the assumption that if their aspirations could be deemed typical or representative of other graduates who will be coming along for the next few years, there would be clues as to fields of study in which the college might consider developing offerings (if not currently available). Approximately 66 percent of all respondents named a job. About 4 percent did not respond or indicated they didn't know what they wanted to do. Job aspirations were as follows:

- Health (23)
  - Physician (9)
  - Dentist (2)
  - Psychologist (4)
  - Physical Therapist (2)
  - Speech Pathologist/Audio Linguist
  - Nurse (2)
  - Dental Assistant
  - Medical Technologist
  - Medical Missionary
- Teaching (24)
  - Teacher (12)
  - Teacher of Mentally Retarded (2)
  - Special Education Teacher (3)
  - Music Teacher (3)
  - Home Economics Teacher
  - Physical Education Instructor
  - History Teacher
  - Secondary School Counselor
- Law and Law Enforcement (17)
  - Lawyer (14)
  - Corrections Administration
  - Legal Assistant
  - Law Enforcement
- Data Processing (5)
  - Computer Programmer (3)
  - System Analyst (2)
- Agriculture (7)
  - Veterinarian (4)
  - Park Administrator (2)
  - Game Biologist
- Business (30)
  - Actuary
  - Accountant (3)
  - Certified Public Accountant (4)
  - Economist (3)
  - Personnel Director
  - Public Relations Director
  - Advertising & Design
  - Management
  - Booking Agency
  - Airline Hostess
  - Legal Secretary
  - Medical Secretary
  - Bank Clerk
  - Administrative Assistant
  - Business Mgmt Control/Production Control
  - Business Executive
  - Auditor
  - Secretary
  - General Foreman-Industrial or Business
  - Store Manager (2)
  - Buyer or Mgr. Clothing Dept.
  - Run my own Business
- Art, Music & Drama (11)
  - Musician (3)
  - Professional Artist
  - Interior Decorator (2)
  - Fashion Illustrator
  - Theatre Costuming
  - Artist (2)
  - Dramatic Stage Career

Communications (7)
- Bilingual Interpreter
- Journalist
- Radio Production Artist
- T.V.-Radio Performer (2)
- T.V.-Radio Sports Announcer
- Photographer

Engineering & Science (14)
- Chief Ship's Engineer
- Science Researcher-Physics (3)
- Scientist
- Bio-Chemist
- Chemist
- Zoologist
- Electrical Engineer
- Geochemist
- Engineer
- Microbiology Laboratory Specialist
- Marine Biology Researcher (2)

Social and Government Service (23)
- Community Planner
- Social Rehabilitation Worker (3)
- Sociologist or Sociological Research (2)
- Family Counselor & Life Education
- Community Involvement
- Urban Planning (3)
- Minister
- Politician (2)
- Foreign Service
- Government Official (5)
- International Relations
- Fireman
- Naval Officer

Miscellaneous (9)
- Architect (2)
- Housewife (3)
- Mathematician
- Researcher (2)
- Jeweler

Observation of future occupational aspirations of graduates responding to this study reveals a variety of specific job interests in each of the broad classification categories. The greatest incidence of interest was for jobs in the business, teaching, health, and social and government service-related areas. Considerable interest was also evinced in the fields of law and science based occupations.

Factors Related to College Attendance

Asked how their parents or guardians felt about their going to college after high school graduation, 25 percent of the men and 18 percent of the women (or a total of 21 percent) indicated parents insisted they go to college. Seventy-four percent of the men and 80 percent of the women (or a total of 77 percent) indicated parents wanted them to attend college if they wanted to do so. Two percent of the women indicated their parents were indifferent, and 1 percent of the men indicated they didn't know how their parents felt about the matter. Thus, about 98 percent of the graduates who responded thought their parents either insisted or wanted them to attend college.

Of the 28 respondents reporting they were not attending school either full or part-time, 20 cited the reasons of most importance. Of these, 40 percent indicated they were not interested, 15 percent indicated they did not have time, and 10 percent each cited as reasons lack of finances, family responsibilities, and that they did not take college preparatory subjects in high school. Five percent each, cited as reasons military service, program not available near where they lived, and that they had already completed the school attended following high school graduation.

Three percent of all graduates responding indicated they did not attend school after graduation but would have done so provided more financial assistance had been available.

Fields of Study in Which Graduates Had Most Interest

Graduates were asked to select from a listing supplied them one field in which they have had the most interest for study or to indicate lack of interest in any of the fields listed. Unknown to the respondents was that the listing submitted contained fields of study currently offered at Montgomery College. One percent gave no response, and about 11 percent indicated no interest in any of the fields listed as shown in Table 78. Forty-three percent of the respondents indicated there was a field of study not listed in which they would have had interest, and the fields named are presented below.

Observing Table 78 one can see, for example, that of the men who had attended college, 6 percent were interested in accounting, none were interested in advertising art, 9 percent were interested in business administration, etc. Other data are to be read in similar fashion. The largest percentages of both men and women who had attended college expressed interest in liberal arts as a field of greatest interest. Next in order for the women was interest in teacher education, while men expressed greatest interest in the study of medicine, law, and business administration. The same pattern of greatest interest was expressed by all women respondents as those who had attended a college or university. The largest percentage of all men respondents cited science as the field of greatest interest for study, with law second in order, and medicine, liberal arts, and business administration next in order. These data show that of all the men and women who had attended college, 91 and 88 percent, respectively, could have found the program of greatest interest at Montgomery College. This was the case also for 88 percent of all respondents.

Respondents who indicated they were interested in a field of study not shown in Table 78 named the fields shown following the table. The number of times a field was suggested if it was named more than once is shown in parentheses.

TABLE 78

PERCENT OF GRADUATES BY FIELD OF GREATEST INTEREST FOR STUDY

Field of Study	No Further Educ.		Attended College		All Respondents	
	Men	Women	Men	Women	Men	Women
Accounting			6	4	6	3
Advertising Art				1		2
Business Administration			9		7	
Business Management			1	1	2	1
Marketing			1	1	1	1
Secretarial		50*		7		7
Cartography (Map Making)						1
Community Planning			1	2	1	2
Teacher Education			7	12	6	12
Instructional (teacher's Aide						
Geography						
Engineering (Technology)			3		4	
Engineering (Professional)	50*		4	1	6	1
Art			2	5	2	4
Music	50*	50*	5	2	5	4
Theatre Arts				4		4
Liberal Arts			7	13	7	13
Science			13	2	12	2
Home Economics				1		1
Law			9	7	9	6
Dentistry			1		2	
Medicine			9	4	7	4
Optometry						
Pharmacy						
Medical Laboratory Tech.			1	1	1	1
Dental Labortory Tech.						
Dental Assisting				2		3
Nursing				2		2
Medical (office) Assist.				2		3
Mental Health Associate						
Radiological Tech.(X-Ray)						
Computer Science & Tech.				2	1	3
Food Service Management			1		1	
Hotel/Motel Management			1		1	
Criminal Justice			1	5	1	4
Fire Science			1		1	
Printing Technology						
Recreation Leadership			1	1	1	1
None of these			9	12	11	11
No Response				1	1	1

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*Only one person each. Differences in the sum of parents and 100 percent are due to rounding.

Agriculture
Veterinary Science (2)
Animal Wildlife
Riding & Stable Mgmt.

Liberal Arts & Science
Extra Sensory Perception
Psychology (9)
Philosophy (2)
Archeology
Anthropology
Economics (3)
French
Journalism (4)
Classics
History (2)
English Literature
Mathematics (5)
Marine Biology
Physics
Science (2)
Politics (2)
International Affairs

Communications
Radio (2)
Television (2)
Recording Industry

Fine Arts
Music
Theatre
Interior Design (2)
Jewelry and Gemology
Photography (4)
Film Making
Costuming

Business
Industrial Management
Business Administration
Actuarial Science

Trade & Technical
Automotive Technology
Aviation
Sign Painting

Health Related
Dental Hygiene
Speech & Hearing Science (3)

Religion
Christian Education
Pre-Ministerial
Religion (2)

Miscellaneous
Architecture
Special Education
Social Work (2)
Textiles

Some of the suggested fields of study listed under liberal arts and science are already offered by the College as were a few other fields such as music and business administration. Apparently some respondents did not associate specific fields suggested with the broad classifications of science and liberal arts in the listing.

Graduates were asked to indicate from a listing of non-credit Community Services offerings their first and second choice of topics which would be of greatest interest to them or to name topics of interest not included in the listing. Twenty-four persons indicated there were other topics of interest, which are presented later in this section. Fifteen persons indicated none of the topics listed were of interest as either a first or second choice.

Shown in Table 79 are the numbers and percentages of respondents who expressed interest in each of the Community Services topics listed. Leading the first choice were: (1) photography, (2) speed reading,

TABLE 79

PERCENT AND NUMBER OF ALL GRADUATES BY INTEREST IN COMMUNITY SERVICES COURSES

Community Service Topics of Interest	First Choice		Second Choice	
	Number	Percent	Number	Percent
Painting	6	3	2	1
Ceramics	5	3	6	3
Photography	17	10	11	6
Applied Psychology	11	6	11	6
French	1	.6	1	.6
Hebrew	1	.6	1	.6
Spanish			1	.6
Speed Reading	15	8	8	5
How to Study	2	1		
Oral Communication	5	3	1	.6
Creative Writing	6	3	3	2
Contemporary Literature	1	.6	5	3
Fabric & Apparel Construction	4	2	6	3
Typewriting			2	1
Secretarial Skill Refresher	1	.6		
Practical Consumership Topics (taxes, home buying, law, investments)	5	3	8	5
Heating, Refrigeration, & Air Condit.	2	1		
Indoor Gardening	2	1	3	2
Self Defense	10	6	20	11
Dance Therapy	7	4	4	2
Technical Report Writing				
Literary Criticism	3	2	1	.6
Appliance Repair			5	3
Public Opinion Media	3	2	4	2
Interior Design	4	2	7	4
Management Principles & Skills	3	2	2	1
Principles of Supervision	2	1	3	2
Landscape Design	4	2	2	1
Contemporary Drama	2	1	2	1
Horse Management	5	3	2	1
Sight Singing	2	1	5	3
Fashion Awareness	1	.6	4	2
Art Appreciation	4	2	1	.6
Psychology of Women	3	2	2	1
Automotive Technology	8	5	10	6
Veterinarian Assistant	5	3	5	3
No topics like these interest me	6	3	9	5
No Response	6	3	10	6

(3) applied psychology, (4) self defense, and (5) automotive technology. Leading the second choice interests were topics on: (1) self defense, (2) photography, (3) applied psychology, (4) automotive technology, and (5) speed reading or practical consumership.

Other topics of interest named were:

Music (3)
Piano
Voice
Music Appreciation (2)
Radio Producation
Crafts
Design
Handiwork-Needlepoint (2)
Computer Mathematics
Stripping (Graphics)
Motorcycle Mechanics
Engineering
Meteorology-Astronomy
Architecture (2)

Investments
House Buying
Shorthand
Economics
Racial Awareness
International Policy (i.e., trade, monetary systems, etc.)
Effects of Mass Media
Development of Modern Capitalism in Western Civilization
Contemporary Philosophy
Grammar
Dental Assisting (refresher to take exam)
Methods of Teaching Mentally Retarded

Other Types of Assistance and Educational-Cultural Services and Activities of Interest

Respondents were asked in which of several types of assistance they would have most interest. Results are presented in Table 80 by percent of men and women expressing interest. Thirty-two of the respondents

TABLE 80

PERCENT OF GRADUATES BY TYPE OF ASSISTANCE OF MOST INTEREST

Type of Assistance	Men	Women	All Graduates
Refresher Mathematics	8	5	7
Reading Improvement	11	9	10
Individual Sport Instruction	10	8	9
Individual Music Lessons	18	17	18
Job or Career Counseling	17	32	25
Refresher Secretarial Skills		7	3
None of These	27	20	23
Other	8	1	5

(18 percent) did not reply to this question, but data are shown for the 145 persons (82 percent) who did respond. Five percent of the respondents indicated an interest in some other type of assistance. Over one-fifth (23 percent) were interested in none of the types of assistance listed in Table 80. The largest percentages of men and women were interested in job or career counseling or individual music lessons. Nearly one-third of the women responding expressed interest in job or career counseling. Ten percent of all graduates responding to the question expressed interest in reading improvement. Other types of assistance not listed but suggested were:

Oral and Writing Skills
Writing
Study Skills
Language Skills
Dance Lessons
Affecting Change in Government
Other Types of Counseling

One-third of all respondents to the study indicated that there were some types of educational-cultural services and activities they believed should be available to adults in the area where they live. Those suggested were:

Refresher Mathematics (Algebra)
Band Program
Writing Courses
More Courses in the Fine Arts
Music Instruction (2)
Jewelry
Gemology
Criminal Justice
Secretarial Skills
Sex and Drug Education
Free Concerts
Self Defense
Budgeting
Human Relations
Community Relations
T.V./Radio Repair
Basic Auto Maintenance & Repair
How to Figure Your Income Tax
Food Service Management
Hotel/Motel Management
More Community Activity
How to be Friendly

Teach English speaking and writing for adults of foreign backgrounds
A comprehensive course in evaluating government, governmental systems, legislative bills, officials, and corruption
More non-credit courses in cultural stuff; i.e. music, social dancing, etc.
Sponsor neighborhood discussions on contemporary issues; i.e., politics, schools, lectures, etc.
More opportunity to take advantage of the cultural opportunities in the District of Columbia area coordinated with educational background (e.g., art appreciation and history, language courses and refreshers, etc.)
Have short (3-session) seminars at the local high schools at nights that would deal with various topics
Opportunity for parents to indulge in organized physical activities
Refresher courses for senior citizens to enable employment
Some sommunity education lectures/discussions on such topics as pornography, drugs, sexual awareness, family relations, etc.
Programs to teach parents about kids today and about drug problems which can arise without them knowing it

Community awareness program getting to meet more families in the area would be good

Problems of daily living (i.e. budgeting, marriage, psychology of parenthood, consumer buying, etc.)

Legal proceedings concerning (a) What to do when you are sued, (b) death, (c) choosing a family doctor

Exhibits or seminars on problems of today and what can be done (e.g., energy crisis, fuel shortage, drugs, Watergate, abortion)

Study courses in applied ecology, government services, art, literature.

Consumer help, practical help in law, mechanical instruction-automobiles, etc., etc.

Advanced musical enlightenment-individual instruction

Increase educational and cultural areas.

Theatre, movies, art classes, community groups, sports

Child-parent psychology sessions, classes in adolescent psychology/ dev. for parents, and classes that represent a wide spectrum of possible interests for parents

More county sponsored adult recreation in the high schools.

Offer whatever people would show an interest in--I see my fellow classmates stagnating already.

Same as the Public Schools are offering with their night school

Saturday non-credit general information classes

Facilities of each high school should be available to the community nights and week ends.

Develop an adult-recreation central facility.

Activities are now offered but at inconvenient times and lack of transportation is a problem.

Develop an International Counseling Center.

Premarital counseling

Available counseling for people wishing to return to school

Organize an International Student Union for foreign students living in the area.

Keep the public much more informed as to what happens at Montgomery College.

I suppose there a lot of classes offered, but maybe they aren't well enough advertised.

Observation of the suggestions given above reveals that interests focus upon topics of social and personal problems of life, cultural interests, and need for some types of counseling services.

Summary

1. Most of the 1972 high school graduates responding (approximately 80 percent) lived in Montgomery County, most (approximately 80 percent) were attending school full-time, and slightly over one-half were women. Sixty-three percent had completed a high school college preparatory course, and 28 percent had completed a general course.

2. About the same percentages of all graduates had attended the University of Maryland (28 percent) and Montgomery College

(29 percent); a slightly higher percentage of men (29 percent) than women (28 percent) had attended the University, and a higher percentage of women (31 percent) than men (26 percent) had attended Montgomery College. Over one-fifth (22 percent) of all graduates had attended college out of state and some place other than the District of Columbia.

3. Most of the respondents who attended the University of Maryland had completed a high school preparatory curriculum, but about one-half of those attending Montgomery College had completed a general curriculum.

4. Desire to live away from home and desire for a better college were cited by graduates as reasons of some importance why more of their friends and acquaintances did not enroll at Montgomery College. The largest percent of graduates who had attended college cited these reasons, but the largest percent of those who had not attended college cited advice of others and unavailability of program wanted as of much importance. While the largest percentages of both men and women indicated that campus location and lack of transportation were reasons of no importance, higher percentages of women than men indicated they were reasons of some importance (over one-third of the women felt lack of transportation was of some importance).

5. Larger percentages of graduates who had attended Montgomery College than the University of Maryland gave job preparation and job improvement as major purposes why they would be interested in further education. Larger percentages of those who attended the University gave self-improvement and desire to finish the program they were in as major purposes.

6. Over two-thirds (69 percent) of all graduates responding aspire to a professional career, and 14 percent expect to follow a semi-professional, technical, or middle level business occupation. Three-fourths of the men who had gone to college and 78 percent of the women aspired to a professional career, but 15 percent of the men and 7 percent of the women who had attended college did not know what they planned to do.

7. Long-range occupational interests were predominant in the areas of business, teaching, health, social and government services, law, and science-based fields.

8. Graduates' perceptions of how their parents felt about them continuing their education beyond high school revealed a very high level of encouragement as 98 percent believed parents either insisted or wanted them to continue.

9. The largest percentage of graduates who were not attending school at the time of the study gave lack of interest as the reason. The number of these graduates who indicated they would have attended school if more financial assistance had been available represented 3 percent of all graduates responding to the study.

10. Women expressed most interest for further study in liberal arts, teacher education, law, and art. Men expressed most interest in science, medicine, law, liberal arts, and business administration. Data show that 91 and 88 percent, respectively, of the men and women who attended college could have found the program of their greatest interest at Montgomery College.

11. Fields of interest for further study suggested by graduates included veterinary science, interior design, photography, automotive technology, dental hygiene, speech and hearing science, social work, and radio and television communications which are programs offered by some community colleges.

12. First choice interests in community service topics were given by the largest percentages of graduates for (1) photography, (2) speed reading, (3) applied psychology, (4) self defense, and (5) automotive technology. Predominant second choice interests were for (1) self defense, (2) photography, (3) applied psychology, (4) automotive technology, (5) speed reading, and (6) practical consumership. Other suggested topics included music, social and political science-related topics, business topics, motorcycle mechanics, and a miscellany of other topics.

13. The largest percentage of all graduates expressed interest in job or career counseling as a type of assistance in which they would be interested--nearly one-third of the women responding expressed interest in this type of assistance. Slightly under one-fifth of the men and women expressed interest in individual music lessons as a type of assistance. Next in order of incidence of expressed interest were reading

improvement (10 percent), individual sport instruction (9 percent), refresher mathematics (7 percent), and refresher secretarial skills (7 percent of the women). Other suggestions focused on basic communication skills.

14. One-third of all graduates believed there were some types of educational-cultural services and activities which should be available to adults in the area where they live. Their suggestions included a wide variety of special interest topics, emphasis upon community education lectures, discussions, and seminars focused on problem areas, increased cultural opportunities, development of expanded counseling services for adults, and suggestions for keeping the public more informed about offerings available.

CHAPTER X

STUDY OF MONTGOMERY COLLEGE STUDENTS

Introduction

Information and opinions were sought from students currently enrolled at the Montgomery College campuses. Although data from seniors, high school graduates, community leaders, and parents were obtained from those living in the "down county" area, the study of College students included a sampling of all students, regardless of where they lived. A statistically random sample of persons enrolled at each campus was drawn, so the selected persons identified for contact would be representative of the entire student body.

Printed questionnaires prepared for the purpose were mailed to 609 students. After two weeks, a second questionnaire and letter inviting cooperation in the study were sent to persons who had not replied. A total return of 58 percent of the students resulted. Telephone contact was then made with many students who had not replied, and a total usable return of 403 (66 percent) resulted. Whereas anonymity was provided other types of respondents from whom information was obtained, address labels were placed on the front of each questionnaire sent to College students. Telephone contacts revealed that this identification was the reason some students had not responded. Data obtained in this part of the study are presented in this chapter.

Characteristics of College Students Responding

Of the respondents, 196 were men and 207 were women. Twelve were enrolled off campus, 79 were enrolled at Takoma Park, 311 were enrolled at Rockville, and 1 did not indicate place of enrollment. Two-thirds (267 students) had completed 29 credits or less (freshmen), 29 percent (118 students) had completed 30 credits or more (sophomore), and over 4 percent (18 students) did not indicate the number of credits completed. Students enrolled full-time (12 or more credit hours) constituted 58 percent of the group responding; 42 percent were enrolled part-time. About the same percentage of men students was enrolled part-time from "down county" high schools as from other high schools in Montgomery County. A larger percentage of girls from high schools out of the "down county" area was enrolled part-time than were those from "down county" high schools.

Sixty-two percent of the respondents had attended high school in Montgomery County and 38 percent had gone to high school elsewhere. Of just the respondents who had attended high school in the County, 66 percent had attended a high school in the "down county" area, 24 percent had attended a school located elsewhere in the County, and 10 percent did not indicate what high school they had attended. However, respondents from high schools in the "down county" area constituted only 41 percent of all respondents to the study. Ninety-two percent of all respondents lived in Montgomery County while attending college. Of the respondents who had attended a "down county" high school, 75 percent were enrolled at the Rockville campus, 24 percent were at Takoma Park, and 1 percent were enrolled off campus. Of the respondents enrolled at Rockville, 60 percent were from "down county" high schools, 28 percent were from other schools in Montgomery County, and 12 percent had attended high school elsewhere. Of respondents from Takoma Park, 73 percent had attended a "down county" high school, 18 percent had gone to a high school elsewhere in Montgomery County, and 7 percent had attended high school elsewhere.

A little more than one-third (35 percent) of the respondents were unemployed while attending college. About one-fourth (26 percent) worked 20 hours or less per week, while one-fourth worked 31 or more hours. Fourteen percent worked 21-30 hours each week. Thus, 39 percent were working half time or more while attending college.

Three percent (13 respondents) were under age 18, 53 percent were age 18-21, 17 percent were age 22-25, 15 percent were age 26-33, and 12 percent were age 34 and over. Thus, of all respondents, 44 percent were age 22 and over. Larger percentages of women than men were over age 22. About one-third of all respondents (32 percent) indicated they had been in the top third of their high school graduating class academically. Nearly one-half (49 percent) indicated they had been in the middle third of their class academically, and 13 percent indicated they had been in the lower third. Four percent of all respondents had not graduated from a high school, and 2 percent did not respond to this question. At the time of the study, 53 percent of all respondents planned to complete a degree or certificate program at Montgomery College, 19 percent did not know if they would, and 28 percent did not plan to do so. Responses of men and women were similar on this matter. Of the men and women who had gone to a "down county" high school, 56 and 53 percent, respectively, planned to complete a degree or certificate at Montgomery College; 27 and 16 percent, respectively, did not know if they would.

Forty-five percent of the women who reported having been in the top third of their high school class academically expected to complete a degree or certificate program at Montgomery College, compared to 55 and 57 percent, respectively, of those reported having been in the middle and lower thirds. However, 66 percent of the men reported in the top third expected to complete such a program, compared to 49 and 58 percent, respectively, in the middle and lower thirds. The higher the reported previous academic level of girls, the smaller the percentage who expected to complete a degree or certificate program, but the smallest percentage of boys who did not expect to complete a degree or certificate program was those reported in the middle third.

About 54 percent of all respondents expected to continue their formal education on a full-time basis after completing their studies at Montgomery College, and 35 percent expected to do so on a part-time basis. Eleven percent did not plan on more formal education. Four percent of the men and 14 percent of the women from "down county" high schools did not plan on more formal education, but 33 percent of the men and 29 percent of the women who had attended "down county" area high schools expected to continue their education on a part-time basis.

Sixty-four percent of the men and 56 percent of the women from "down county" area high schools expected to continue their education on a full-time basis.

An analysis between reported rank in class and the basis on which students expected to continue their formal education revealed that, while about the same percentages of men from each of the three levels expected to attend full-time, increasing percentages expected to attend on a part-time basis as previous academic level declined. However, increasing percentages of women expected to attend full-time as their reported previous academic level decreased, and decreasing percentages of women expected to attend part-time as previous academic level decreased.

Shown in Table 81 are the percentage distributions of responding college students by program of study in which they were enrolled. One can observe that the largest percentages of men respondents were in general education, business administration, engineering technologies, criminal justice, computer science and technology, and special non-degree programs. The largest percentages of women were in general education, secretarial, special non-degree, art, education, and liberal arts and science programs. Except for six programs, some of the respondents were enrolled in each program currently offered by the College.

Eighty-three percent of the students usually get from where they start the trip to the College location by automobile or other motorized vehicle owned by themselves or a family member. Four percent use public transportation, 6 percent ride in a car pool or with friends, and 6 percent walk or ride a bicycle. One percent didn't tell how they got to the College. Twenty-three percent spend less than 15 minutes on the average traveling to the College, and another 53 percent spend over 15 minutes but less than 30 minutes. Seventeen percent spend from 30 to 45 minutes in getting to the College, and 6 percent spend between 45 minutes to an hour en route; 1 percent spend over an hour. Thus, over three-fourths of all students (76 percent) spend less than half an hour on the average in getting from their usual starting point to the College.

Students were asked how likely it is that they would attend classes at a new Montgomery College campus if one were in operation closer to home. Thirty-nine percent indicated they would probably attend classes on a campus closer to home, 26 percent indicated they would prefer to attend classes where they were enrolled, and 18 percent indicated it wouldn't make any difference. Seventeen percent indicated they didn't know. Responses from men and women were similar. Thirty-nine percent of the men from high schools in the "down county" area, compared to 32 percent from high schools elsewhere in Montgomery County, and 43 and 27 percent, respectively, of the women would attend closer to home. However, 26 percent of the "down county" area men, and 29 percent from elsewhere in the county--and 20 and 48 percent, respectively, of the women--would prefer to attend where they are enrolled. The largest percentage who want to stay where they are enrolled are women from outside the "down county" area.

TABLE 81

PERCENT OF COLLEGE STUDENTS BY PROGRAM OF STUDY

College Program of Study	Men	Women	Total
Accounting	2	1	1
Advertising Art	1	2	2
Art	2	6	4
Business Administration	14	3	9
Computer Operator Certificate	0.5	--	0.2
Computer Science & Technology	6	5	5
Criminal Justice	6	1	4
Dental Assisting	--	0.5	0.2
Dental Assisting Certificate	--	0.5	0.2
Dental Laboratory Technology	--	0.5	0.2
Education	2	6	4
Education for Industry	--	--	--
Engineering	5	1	3
Engineering Technologies	7	--	3
Fire Science	2	--	0.7
Fire Science Certificate	--	--	--
General Education	18	20	19
Geography, Cartography & Community Planning	2	--	0.7
Home Economics	--	--	--
Hospitality Management	2	--	1
Instructional Aide Certificate	--	0.5	0.2
Liberal Arts & Science	5	6	5
Medical (Office) Assistant	--	1	0.5
Medical (Office) Assistant Certificate	--	--	--
Medical Laboratory Technician	--	2	1
Medical Technology	--	2	1
Mental Health Associate	0.5	0.5	0.5
Music	0.5	1	1
Nursing	--	5	3
Physical Education	2	0.5	1
Pre-Dentistry	0.5	0.5	0.5
Pre-Law	1	--	0.5
Pre-Medicine	3	1	2
Pre-Optometry	--	--	--
Pre-Pharmacy	1	2	1
Printing Technology	1	--	0.5
Radiation Science	--	--	--
Radiologic (X-Ray) Technology	0.5	--	0.2
Recreation Leadership	3	3	3
Secretarial	--	8	4
Secretarial Certificate	--	1	1
Theatre	--	2	1
Special Non-Degree	6	7	6
Other	7	5	6
No Response	1	2	2

Plans of Students After Attending Montgomery College

Students were asked what they would most probably do the year after they are through attending Montgomery College. Responses are shown in Table 82 by percent for men and women. Over two-thirds of the men (68 percent) and slightly more than one-half (57 percent) of the women, or 59 percent of all respondents, indicated they expect to transfer for further schooling to a four-year college or university. Nearly one-fourth of the women (24 percent) and 13 percent of the men expect to work on a job for someone. Two percent expect to enter a trade or technical school, and 2 percent plan to run their own business. Three percent expect to travel, and 11 percent plan to do something other than these things. Two percent of the women expect to become housewives full-time. Thus, about 60 percent of the respondents plan to transfer for further education. Seventy-two percent of the men and 59 percent of the women from "down county" high schools expected to transfer to a four-year college for further education.

TABLE 82

PERCENT OF STUDENTS BY FUTURE PLAN

Plan	Men	Women	Total
Transfer to a four-year college/university	68	51	59
Enter a trade or technical school or institute	2	2	2
Enter military service	--	--	--
Work on a full-time job for someone else	13	24	18
Run their own business	2	2	2
Become a housewife full-time	--	2	1
Travel and see some things	3	3	3
Other	11	12	11
No Response	2	4	3

An analysis of the relationship between reported previous academic background and plans after leaving Montgomery College showed that increasing percentages of men and women expected to transfer to a four-year college or university as the reported high school academic rank decreased, and smaller percentages expected to work for someone else. This finding seems to be the reverse of what one would expect. An analysis of intent to complete a certificate or degree at Montgomery College and plans after students are through attending, revealed that 69 and 48 percent of men and women, respectively, who do not expect to complete a credential planned to transfer to a four-year college or university; as did 71 and 55 percent, respectively, who do expect to earn a degree or certificate. Over one-half (56 percent) of the men and 43 percent of the women students who did not know if they would complete a credential at Montgomery College also expected to transfer.

Student Evaluation on Selected Aspects of Montgomery College

Asked if they would still enroll at Montgomery College if they were making the choice again, 77 percent of all respondents said "yes." Nine percent indicated they would not choose Montgomery College, 13 percent didn't know if they would do so, and 1 percent did not respond. Responses of men and women were similar; however, a slightly higher percentage of men than women would definitely enroll if making the choice again, and a slightly higher percentage of women than men did not know if they would make the same choice again if doing it over. The higher the reported high school academic level, the larger the percentage of women who would choose the College again. The largest percentage of men who would select the College again had been in the top academic level; and the largest percentages who would not select the College had been in the middle and lower levels.

Eighty-five percent of the men who expect to complete a degree or certificate at Montgomery College indicated they would elect to enroll at Montgomery College if choosing again, compared to 78 percent not planning to earn a credential, and 64 percent not knowing if they would do so. The response pattern differed among women, for 80 percent not planning to earn a credential would again enroll at the College if making the choice as would 76 percent who plan to complete a credential program. Seventy percent who don't know if they will complete a credential indicated they also would enroll in the College if doing it over again. The largest percentages, then, who would enroll again were men who plan to complete a degree or certificate program and women who do not plan to complete such a program.

Respondents who would not choose to enroll at Montgomery College if making the choice again were asked what reasons would cause them not to do so. Each was asked to indicate as many reasons as applied, so it was possible for each respondent to select one or more reasons, or all of them. Incidence of response is shown in Table 83 by percent of all respondents who did not indicate they would select the College and by number of times each reason was cited. It can be seen, for example, that 10 percent of the men and 14 percent of the women who did not indicate they would select the College again, said lack of interest of College personnel was a reason. Other data are to be read likewise. The reason cited by the largest number and percentage of students was lack of desired college atmosphere. This reason was cited by one-fourth the respondents who did not indicate they would choose the College if making the choice again; the group giving this reason represented 5.7 percent of all respondents to the study. Lack of desired college atmosphere, lack of student activities, and difficulty of courses were cited most by men. Reasons cited most by women were limited course or program offerings, lack of desired college atmosphere, and lack of interest of the College personnel. In terms of total number of respondents, each of the reasons shown in Table 83 was cited by a relatively small percentage of students.

TABLE 83

REASONS WHY STUDENTS WOULD NOT SELECT MONTGOMERY COLLEGE

Reason	Men		Women		Total	
	Number	Percent	Number	Percent	Number	Percent
Lack of interest of faculty, administration, staff	4	10	7	14	11	12
Lack of student activities	5	12	2	4	7	8
Limited course or program offerings	4	10	10	20	14	15
Grading system needs improving	3	7	4	8	7	8
Instructional methods & general approach to learning is not acceptable	3	7	6	12	9	10
Lack of desired college atmosphere	14	34	9	18	23	25
Difficulty of courses not to my liking	5	12	2	4	7	8
Lack of direction	4	10	6	12	10	11
Assistance not available when needed	4	10	4	8	8	9
Other	9	22	6	12	15	17

Forty-one percent of all students believed there would be an advantage if students could enroll at the Rockville and Takoma Park campuses at the same time and take part of their classes at each place. Thirty-eight percent did not think there would be any advantage in such an arrangement, 20 percent indicated they did not know whether there would be an advantage, and 1 percent did not reply. Of the men and women in the "down county" area, 38 and 41 percent, respectively, thought such an arrangement would be of advantage; 20 and 40 percent, respectively, did not think so; and 20 and 26 percent did not know if there would be an advantage.

College students were asked how well they thought the course of study in which they were enrolled was preparing them for what they planned to do after completing studies at Montgomery College. Responses are shown in Table 84 by percentages of all men and women and for men and women who attended a "down county" high school giving each evaluation. Observing the data, one can see that larger percentages of all the women than men respondents believed their course of study was preparing them better. However, the converse was the case for respondents from the "down county" area. About one-fifth of all the men (19 percent) indicated they believed their program was not preparing them very well for what they planned to do or that the preparation was fair and could be better. A total of 15 percent of all respondents, including 18 percent of the men and 21 percent of the women from "down county," expressed this opinion.

TABLE 84

PERCENT OF STUDENTS BY PERCEIVED EFFECTIVENESS OF COLLEGE PREPARATION

How Well College is Preparing for Future Planned Activity	Men		Women		Total
	All Students	Down County	All Students	Down County	All Students
Not very well	5	4	1	3	3
Fair, but could be better	14	14	11	18	12
Good in most ways; could be better in some ways	36	41	29	34	33
Giving just what I think I need	43	39	55	43	49
No Response	2	2	4	4	3

One-third of all respondents indicated they thought their program was good in most ways, but could be better in some ways. About one-half of all respondents, and about 41 percent of the "down county" respondents indicated they thought their program was giving them just what they believed they needed. As reported previous rank in class decreased, the percentages of students increased who believed their course of study was not preparing them very well or that it was fair and could be better. Conversely, the higher the reported previous rank in class, the larger were the percentages of students who believed the College was giving them just what they needed. The largest percentages who believed they were getting just what they needed from the College program in terms of future plans were men who plan to complete a certificate or degree at Montgomery College.

Students who indicated they were getting less than all they thought they needed were asked how they thought Montgomery College could prepare them better. Their comments and suggestions are listed below.

1. Curriculum - Teaching Methods and Characteristics

Less of a "grade" orientation. The emphasis in my course seems to be in learning just for the examinations rather than learning concepts.
Improve teaching methods. The faculty is alright, but the method could be better.
Printing technology should be improved and should not be based on theory alone.
By offering a much better course of studies
Install another terminal or increase the present hours, so more students can have access to them.
Upgrade the curriculum with emphasis on basic and accepted concepts in the DLT field. Also new materials and procedures according to above idea should be introduced into the course.
More vocationally oriented. Many classes are directed for preparing students for a 4-year college and not a 2-year certificate aiding those wishing only a 2-year program and then working.
Course is fine, but I do not care for the bonus point system on which my present class is based.
More "hands on" time with the computer (for computer science & technology students)
By excluding all self-paced classes. On the whole though most classes are very well taught.
Have on-the-job training program for more curricula: e.g., psychology work in a psychiatric clinic or hospital ward.
More discussion of how to use art materials
More programming practice
For computer science and technical majors, more exposure to the hardware for better understanding of just what it is you are working with, and the various types of storage devices.
I believe in a more technical approach of the courses.
English --- is a disappointment.
Some courses lack depth. They don't go into enough detail.
The class I take is all lectures; I don't like that instructional method all the time.
Give more practical advice instead of so much literary information.
I have been to U. of Md. and I think M.C. could be more thorough in some classes and require more of the student.
By course of study, teaching aspects of a subject, and not assuming background that one should have or had years ago; also, better books
More time on computer oriented part of course-less on English, social science, etc.
Course could be more difficult.
Racing through too fast; not spending enough time
By becoming more involved with classroom discussion
Some of the courses need to be changed in a few ways.
All academic and no useful courses in life
So far no one has helped me find out how to teach children. My one class that has anything to do with education is only an elective.
Improve method of instruction.

Guest speakers. On-the-job training! Offer a lecture on what to expect in this field.
Giving good education in my field and encouraging me to progress to my ability
Less academic and more practical work
I find some courses (accounting), although taught well, do not present material so that it can be applied in working as well as it could be.
Eliminate or better the quality of art, music, dance, ecology as to how it applies directly to the field of recreation.
More time spent getting clinical experience-less repetition of reading assignments (same information, just different books)
Faster pace to hold interest, better text book selection and updated curriculum theory
More hospital experience, better organization, concentrate less on general education courses (i.e., English, P.E.) and more on nursing courses
The field that I'm in should have a more practical outlook and more technical knowledge.
The specialized computer courses at M.C. could be better if brought up to more current industry developments.
Better teaching and better atmosphere to do my work
Reduce the speed at which the teachers go.
Experience in the thing that counts

2. Curriculum - Offerings

I would like for it to have a psychology curriculum; that is my major.
Better course choices
More foreign language courses; more music courses at the Takoma Park Campus
Could offer more dance courses
Adapt an interior design course of some type or have more courses related to the subject.
More courses (2)
I am enrolled in General Education, Math/Science sequence and think that there should be more related subjects.
Should have a journalism department
Offer more variety of subjects that are specialized rather than general.
By offering a photography major and a greater selection of honors courses in English
Work in the field that you are preparing for and make it a credit towards graduation.
Offer a broader range of courses in physical sciences, i.e., thermodynamics, hydraulics.
Less courses in Math., English, and P.E. and more courses related to Bus. Admin.
Have better courses and a larger variety
More field work
By offering more intensive art education such as I could get at a 4-year school
Make an extension on botany to include horticulture and green house management
Have a more complete course on my subject

More technical course offerings in my specialty and in math.
For those students in pre-law who must follow the Bus Ad. or political science programs, there should be several law courses offered in each program.
Develop an industrial arts program in conjunction with the one at the U. of Maryland
There should be an on-the-job training (college should make arrangements with local hotels). Adding a few courses in tourism and travel management
On-the-job training
What course at M.C. could better prepare me to be a mailman? Does wanting to be a mailman make me ineligible academically?
More class variety, specialized
Have more courses in criminal justice toward the correction field
More courses offered in Mental Health. One year is not enough. More training on MHA-patient relationship.

3. Instructors - Teaching

Some of the teachers could be better qualified; this is the main reason I dropped the one class I was taking this semester.
Teachers are more concerned with personal achievement than helping the student; also the teachers are reluctant to give any latitude for the older students who have other responsibilities such as children, home, etc.
Need more experienced faculty
The college should employ better instructors who know the material well and can raise the interest of students.
Hire better instructors
The teachers could be more strict in the classrooms.
More interest from instructors
Better faculty
M.C. needs to look at its faculty more closely. Some faculty with tenure need to stop coasting and meet the needs of as well as challenge the class.
Required courses should have more innovative teachers to alleviate the drudgery and leave more free time to devote to elected studies.
A better counseling and advisory staff; a lot of the information which they present to a student is not substantial. If I were to consult two different advisors, their answers would differ greatly.
Teachers should be evaluated; if not satisfactory, should be fired. Class attendance should not be the major factor in determining the grades.
Have a teacher teach Zoology I.
Instructor could be more receptive to needs and interests of the class as a whole concerning subject matter and testing.
Other teacher/student relationship, more challenging and creative assignments
Better screening of instructors. The --- course was disgraceful both in context and instructor qualification.
Get a qualified instructor to teach the course.

4. Course Requirements - Relevancy

Some of the courses that are required, I think, are unnecessary, such as freshman seminar history.

Put more emphasis on courses that deal directly with the different programs and less emphasis on courses that have nothing to do with the different programs.

If selections were more liberal, a couple or more electives of your major could be taken.

By eliminating some of the needless requirements allowing me to take more pertinent courses

I feel some courses are irrelevant to my field.

Eliminate less relevant courses from curricula which really do not need them.

Some required courses seem to have no bearing on the curriculum and the general basic knowledge one should have.

By letting the student take more classes in his curriculum insteaa of mostly requirements

Eliminate such courses as health and freshman seminar to provide more time for more vital courses.

More freedom in course selections, more electives

There are some courses that I'm required to take and I feel that there really isn't a need -- like the sciences and speech. I already had speech in H.S.

Better selection of required courses

The general educatión humanities curriculum should not require science courses which are unnecessary.

Some of the required courses are not related to my program study at all.

Give me the classes I want, and/or the program I want.

Don't require a student to take certain non-essential courses that don't pertain to his major.

By changing some of the requirements to electives

5. Administrative

Fine for 2-year program, but with no 4-year degree available locally, it would be nice if M.C. could offer a 4-year degree in my field, Printing Tech.

Better facilities

I would like more courses offered at night.

Better facilities in secretarial education; more classes in this field at flexible hours

More availability of instructors in lab courses

I think that 16 weeks a semester is not enough to cover all the material in each course. Less vacation time and more time to study would be a way to improve things.

We need smaller classes.

More classes should be offered in TV with better equipment for instruction. The theatre must be brought up to date. Basically, more money should be given to the arts and humanities instead of P.E.

Expand and enlarge classes, because most people who sign up for a class they want badly aren't admitted into it because it is full; they are then left stranded to take something they don't want to take.

A lesser student-to-instructor ratio, increased facilities, and instructional organization; particularly in learning lab, less in quantity, but select audio-visual material

Smaller classes if possible (same situation existed in high school; some students get lost)

6. Relationship With Other Colleges

M.C. needs closer contact with other colleges' requirements.

More directions for students transferring to schools other than the U. of Maryland

A course in the nature of different careers and in understanding of what colleges can offer

7. Student Activities

The College should establish better communications between student activities and the student.

More student activities on campus

8. Miscellaneous

Creating and maintaining a mandatory educational symposium once each semester, where the Dean, faculty, counselors, students, and advisors of Board of Education could ease conflicts and help to simplify hardships, grade disputes, and other college-teacher-pupil problems, etc.

More student-teacher relations

College students were asked to indicate which of several types of programs and services offered by Montgomery College they had used and how much help they had received from each. Results are shown in Table 85. To assist in interpretation, the largest percentages of men and women giving an evaluation of each program or service are underlined. One can see, for example, that 70 percent of the men and 66 percent of the women indicated they had used counseling services. Twenty-two percent of the men and 23 percent of the women indicated they had received much help from these services; 43 and 38 percent, respectively, had received some help; and 13 and 10 percent, respectively, had received no help. The rest of the data in Table 85 are to be interpreted likewise. Observation of the data reveals that, with the exceptions of health and job placement services, higher percentages of the men than women had used all programs or services. The largest percentages of both men and women indicated they had received much help from library materials related to class work. This was the only instance where the largest percentage of students indicated the amount of help received had been considerable. With the exception of help received from transfer information, the largest percentages of men and women were the same in their evaluation of each service or program; in this case the largest percentage of men indicated they received some help, and the largest percentage of women indicated they had received no help.

TABLE 85

PERCENT OF STUDENTS BY PROGRAMS AND SERVICES USED AND AMOUNT OF HELP RECEIVED

Program or Service	Percent Used		Amount of Help Received					
			Lots		Some		None	
	Men	Women	Men	Women	Men	Women	Men	Women
Counseling services	70	66	22	23	43	38	13	10
Career information	25	24	6	8	18	17	21	18
Transfer information	31	26	9	11	22	13	14	19
Financial assistance	23	17	7	12	8	4	27	24
Health services	10	13	5	4	8	10	23	22
Student activities	43	22	17	10	26	21	18	17
Library materials related to class work	76	66	41	30	28	26	6	10
Orientation to college	34	29	11	8	23	23	18	20
Academic advisement on courses to take	61	49	16	14	29	21	17	17
Tutoring services	9	1	5	—	5	1	20	27
Job placement services	10	11	2	1	7	9	23	25
Vocational aptitude and psychological testing	19	13	2	3	10	9	31	22

Largest percentages of men and women indicated they had received no help, in descending order, from: (1) vocational aptitude and psychological testing, (2) financial assistance, (3) job placement services, (4) tutoring services, (5) health services, and (6) career information. It is interesting to note that services least used by students were, in order: (1) tutoring services, (2) job placement services, (3) health services, (4) vocational aptitude and psychological counseling, (5) financial assistance, and (6) career information.

Some help was received by the largest percentages of all students from: (1) counseling services, (2) academic advisement on courses to take, (3) student activities, and (4) orientation to college. The most-used services and programs were: (1) library materials, (2) counseling services, (3) academic advisement, (4) orientation to college, and (5) student activities, in that order.

Thus, it appears that programs and services from which students received most help were those which they used most. The converse was also true. The significance of these data is that in regard to some types of services or programs, the College may wish to initiate steps to foster higher levels of utilization.

Factors Related to Attendance at Montgomery College

Students were asked to indicate the most important reason why they enrolled at Montgomery College and to indicate all other reasons that were also important. Reasons of most importance were cited in Table 86 by the largest percentages of men and women in order of frequency of mention as (1) low cost, (2) convenience of location, and (3) presence of courses they wanted. These reasons were cited by the largest percentages of students as "other" reasons. Only 9 percent of the men and 2 percent of the women enrolled there because they were either denied admission to another school of their choice or had difficulty in another college.

TABLE 86

PERCENT OF STUDENTS BY REASON FOR CHOOSING MONTGOMERY COLLEGE

Reason for Enrolling at Montgomery College	Most Important Reason*			Other Reasons of Importance*		
	Men	Women	Total	Men	Women	Total
Low cost	17	22	20	46	43	44
College classes conveniently located	15	19	17	46	49	47
Courses I wanted were offered	10	18	14	37	38	37
Denied admission to another school of my choice	5	2	3	4	1	3
I had difficulty in another college	5	--	2	3	2	3
Heard Montgomery College offers a good education (good faculty)	11	11	11	35	29	32
Advice of others	5	2	4	21	15	18
Wanted to live at home while attending college	9	3	6	24	21	23
Other	6	7	6	9	12	10
No Response	18	16	17	--	--	--

*Percents add to 100 for the most important reason, but since respondents could cite one or more other reasons of lesser importance, totals may exceed 100 percent.

Percentages of students from "down county" area high schools who cited different reasons of most importance were, for men and women, respectively: low cost (22 and 20 percent), convenient location of campuses (15 and 15 percent), courses wanted were offered (2 and 20 percent), denied admission to another college (5 and 5 percent), had difficulty in another school (5 and 0 percent), heard Montgomery College offered a good education (6 and 10 percent), advice of others (3 and 5 percent), and desire to live at home (9 and 5 percent). In the matter of the most important reason for enrollment, responses of "down county" students differed most from the response pattern of all students in their feeling about the presence of courses wanted. A lower percentage of the "down county" men, and a slightly larger percentage of the women, than was the case of all men and women student respondents, indicated the most important reason for selecting the College was that courses wanted were offered.

Among the other reasons of importance, about a third of the respondents had heard that Montgomery College offered a good education. Over one-fifth (23 percent) wanted to live at home while attending college. Over a fifth of the men and 15 percent of the women indicated one reason they enrolled was advice of others. The lower the reported grade level, the higher were the percentages of men and women who enrolled on advice of others. When reported previous academic level was analyzed by reason cited for enrollment, it was found that the reason of most importance given by men in the top third academically was convenience of location, in comparison with low cost cited by others. Ten percent of men graduates reported in the lower third, 4 percent in the middle third, and none in the top third had been denied admission to another school of their choice, as had 14, 3, and no women, respectively. Women in the top and bottom third reported low cost as the most important reason while others cited convenience of location.

College students were asked how important they believed each of several reasons was as to why more of their high school classmates and friends did not enroll at Montgomery College. These data are shown in Table 87 by percentages indicating each degree of importance for each

TABLE 87

PERCENT OF STUDENTS ACCORDING TO IMPORTANCE OF REASONS
WHY MORE CLASSMATES DID NOT ENROLL

Reason Why Classmates and Friends Did Not Enroll	Importance of Reason			
	None	Some	Much	No Response
Lack of money	51	28	3	18
Wanted better college	7	47	29	17
Wanted to live away from home	8	30	44	18
People who "flunk out" elsewhere or can't get into another college	37	37	6	20
Little or no information about M.C.	39	34	8	18
Advice of high school counselors not to enroll	64	14	2	20
Advice of high school teachers not to enroll	62	15	1	22
Program wanted not offered at M.C.	17	57	8	18
Lack of transportation	51	26	4	18
Had no interest in further education	13	55	14	18
Location of classes not convenient	52	26	3	19

reason. One can see, for example, that lack of money as a reason was judged as of no importance by 51 percent of the respondents, 28 percent felt lack of money was of some importance, and 3 percent believed this reason was of much importance. Other data are to be read likewise. The largest percentage of students (44 percent) believed desire to live away from home was of much importance. Largest percentages of students believed that desire for a better college, lack of program wanted, and lack of interest in further education were of some importance. One-third (34 percent) indicated lack of information about Montgomery College was of some importance. Slightly over one-fourth (26 percent) indicated lack of transportation and inconvenient location of campuses as of some importance.

An analysis revealed that 29 percent of the men students and 23 percent of the women students who did not expect to complete a degree or certificate at Montgomery College indicated lack of transportation as a reason of some importance why more of their friends and classmates did not enroll. This view compares with 23 and 32 percent of the men and women, respectively, who expect to complete a degree or certificate, and with 21 and 27 percent, respectively, who didn't know if they would complete a credential program there. So it can be determined that lack of transportation was cited as of some importance by more women than men, and by men who did not expect to earn a credential at the College and women who planned to complete a credential. Percentages of "down county" men and women who indicated lack of transportation as a reason of some importance were 18 and 36 percent, respectively. Thus, when contrasted with the responses of all students, smaller percentages of the "down county" area, 36 and 27 percent of the men and women, respectively, cited lack of transportation as being of some importance.

Nearly one-fourth of the men who had attended a "down county" high school (24 percent), compared to 18 percent of men from other high schools in Montgomery County, indicated advice from high school counselors not to enroll in the College was a reason of some importance. This was also indicated by 13 percent of the women from "down county" area high schools, and by 21 percent of women from other high schools in the county. Twenty-eight percent of the men who attended a "down county" area high school, and 21 percent who attended other high schools in the County, indicated advice from high school teachers not to enroll in the College was of some importance as a reason why they thought more of their high school friends and classmates did not enroll at Montgomery College. The responses from women having attended high school in the County anywhere were about the same and coincided with the response pattern shown in Table 87 for all respondents. According to these findings, nearly one-fourth of the men from "down county" area high schools and over one-fifth of the women from high schools in other parts of the County believed a reason of some importance why more of their fellow high school students did not enroll at Montgomery College was advice from high school counselors not to enroll there. A larger percentage of men than women who attended high school anywhere in the County, and particularly in the "down county" area, indicated advice of high school teachers not to enroll in the College was of some importance why more fellow students had not done so.

Perceptions About Kinds of Persons Who Enroll at Montgomery College

To discover the image students have about Montgomery College in terms of who goes there, respondents were asked to indicate how likely they believed it was that each of several types of students would enroll. These data are presented in Table 88. One can see, for example, that 49 percent of all College students responding believed there was a high likelihood that among persons enrolling at Montgomery College would be those who can't finance going somewhere else; 34 percent thought the likelihood was average, 10 percent believed it was not likely, and 8 percent didn't respond. The largest percentage of respondents believed there was an average likelihood that persons enrolling would include all other kinds. The largest percentages of respondents who indicated it was highly likely enrollments would include different kinds of persons believed they would include those who couldn't afford to go elsewhere, who wanted a technical or other career, and those with below-average high school grades. The largest percentage of respondents believed it was not likely enrollments would include persons who had "flunked out" or could not get in elsewhere. Perceptions of students seem to portray a wholesome picture or image, and probably a realistic one, about who enrolls at Montgomery College.

TABLE 88

LIKELIHOOD VARIOUS KINDS OF PERSONS WOULD ENROLL

Kinds of Persons	High Likelihood	Average Likelihood	Not Likely	No Response
Persons who can't finance going somewhere else	49	34	10	8
Students with below average high school grades	28	46	17	9
Persons who want a technical or other career	36	43	11	9
People who "flunk out" elsewhere or can't get into another college	20	41	30	9
Persons who want a good education	25	59	8	8
Students whose high school grades were average or higher	18	56	18	9
Persons with no financial difficulties	10	54	27	9

Interests of Students for Study

Fourteen percent of all respondents (58 persons) indicated there was a field of study not offered by Montgomery College in which they would have been more interested than the program in which they were enrolled. This group included 21 percent of the men reporting they had been in the lowest third of their high school class, 13 percent in the middle third, and 17 percent in the top third. It also included about 15 percent of the women who reported they had been in the top and middle thirds and 7 percent who had been in the lowest third.

The largest percentages of men and women who indicated there was a field of study not offered by the College in which they would have interest were men (31 percent) and women (27 percent) who did not know if they would complete a credential at Montgomery College. When asked what these programs were, respondents named the following:

Health Related
- Dental Hygiene (4)
- Physical Therapy Assistant
- Speech Pathology & Audiology
- Paramedical (Rescue Squad)

Home Economics
- Home Economics (3)
- Nutrition (2)
- Dietetics
- Marriage & Family

Psychology
- Psychology (2)
- Child Development

Liberal Arts & Science
- Sociology (2)
- American Philosophy
- Pre-Chemistry
- Pre-Physics
- Oceanography (2)
- Marine Biology
- Pre-Law

Miscellaneous
- Religion
- Visual & Audio Communication (2)

Trade & Technical
- Electronics
- Carpentry
- Construction Trades
- Building Field

Services
- Teachers' Aide Training
- Bartending
- Library Science (2)
- Tourism & Travel Mgmt
- Para-Legal Aide
- Airline Stewardess

Agriculture
- Forestry (3)
- Horticulture
- Agriculture

Art-Architecture
- Interior Decoration (3)
- More Extensive Art Program
- Landscaping Architecture (2)
- Architecture
- Film Making

Business
- Business
- Accounting
- Retailing & Merchandising
- Banking Management

Trade & Technical (Continued)
- Radio-T.V. Repair (2)
- Electronics Instruction with Lab Equipment
- Industrial Arts
- Gunsmithing
- Auto Mechanics (2)
- Aviation Mechanics (2)

Students were asked if they would be interested in studying on a non-credit basis with others having similar interests a topic of special interest. Nearly one-third (31.3 percent) of all the respondents replied affirmatively, and the largest percentages were men and women students (42 and 64 percent, respectively), who reported being in the lowest one-third of their high school class. The largest percentages of men and women who indicated an interest in studying on a non-credit basis a topic of special interest, were those who did not expect to complete a degree or certificate at Montgomery College. Topics suggested were as follows:

Art
- Art (7)
- Interior Design (3)
- Ceramics (4)
- Contemporary Art
- Industrial Pottery
- Graphology
- Oil Painting
- Crafts (Needlepoint, Macrame, Weaving, Batek, Pottery) (2)
- Sculpture

Liberal Arts & Science
- Spanish
- French
- Archeology
- Mathematics (2)
- English
- Anthropology (2)
- Eygptian History
- Utopianism
- Black History
- Poetry-Writings
- Writing (2)
- Sociology (3)
- Philosophy (2)
- Law (3)
- Journalism
- Physiology
- Foreign Studies
- Current Politics (4)
- Speech (2)
- Hebrew Language
- Hebrew Culture
- Navigation
- Science
- Zoology
- Oceanography (3)
- Relativity

Fine Arts
- Theatre
- Dance Therapy
- Dancing (Other Countries)
- Music (5)
- Drama

Psychology
- Extrasensory Perception (2)
- Supernatural Phenomenon
- Personal Development
- Astrology (3)
- Mental Health
- Child Psychology (2)
- Psychology (6)
- Metaphysical Psychology
- Witchcraft (2)
- Fantasy
- Dream Interpretations

Business
- Secretarial Science (2)
- International Business
- Business Law
- Budgeting
- Accounting
- Typing

Trade & Technical
- Electronics (2)
- Printing
- Automobile Mechanics (8)
- Pipe Organ Construction & Maintenance
- Carpentry
- Motorcycle Instruction (2)
- Construction Trades
- Aviation Safety
- Flying

Physical Education
- Tennis
- Bowling
- Sports
- Skydiving (2)
- Boating
- Judo
- Scuba Diving (2)
- Racing
- Self Defense

Home Economics
- Nutrition (2)
- Child Care
- Marriage & Family
- Home Economics
- Marital Arts

Religion
- Theory of Religion
- Inter-religious Study
- India's Religion
- Theology

Health
- First Aid (2)
- Dentistry
- Dental Laboratory Technology
- Medicine (3)

Agriculture
- Farming
- Horticulture
- Gardening
- Agriculture

Services
- Law Enforcement
- Social Work
- Legal Problems (2)

Miscellaneous
- Tutoring
- Sex Education
- Architectural Rendering
- Media Communications (2)
- Speed Reading (2)

Shown in parentheses are the numbers of times a suggestion was made if it appeared more than once. Suggestions made by the largest number of respondents were for (1) automobile mechanics, (2) art, (3) psychology, (4) music, (5) ceramics, and (6) current politics. Many of the special interest non-credit topics suggested are already available through offerings of Montgomery College, Adult Education Department of the Montgomery County Public Schools, or the County Recreation Department.

Summary

1. Two-thirds of the Montgomery College students responding were freshmen, 62 percent had attended high school in the County, and of those who had attended a County high school, two-thirds had attended in the "down county" area. Three-fourths of the respondents from a "down county" high school were enrolled at the Rockville campus. Fifty-eight percent of all respondents were enrolled full-time. Whereas the percentages of men enrolled part-time were similar, regardless of where they went to a Montgomery County high school, a smaller percentage of girls from "down county" area high schools were enrolled part-time than those who had attended high school elsewhere in the County.

2. Forty-four percent of all respondents were over age 22, and 53 percent of all respondents expected to complete a certificate or degree program at Montgomery College. Nearly 30 percent of the men from "down county" high schools did not know if they would complete a degree or certificate program.

3. Over a half (54 percent) of all respondents expected to continue their education on a full-time basis after leaving Montgomery College, and 35 percent expected to do so on a part-time basis. Smaller percentages of men and women from "down county" high schools than other students expected to continue their education on a part-time basis, and higher percentages from these high schools than others expected to attend on a full-time basis.

4. The largest percentages of men respondents were enrolled in general education, business administration, engineering technologies, criminal justice, computer science and technology, and special non-degree programs. Largest percentages of women were enrolled in general education, secretarial, special non-degree, art, education, and liberal arts programs.

5. Over two-thirds of the men and slightly over one-half of the women expected to transfer to a four-year college or university after attending Montgomery College. Fifteen percent of the men and 26 percent of the women expected to work for themselves or others (primarily the latter) after attending Montgomery College. Larger percentages of men and women from "down county" area high schools than other respondents expected to transfer for continued education. Slightly higher percentages of respondents expecting to earn a degree or certificate at the College, than those who did not, plan on transferring. A majority of all students who did not expect to complete a credential expected to transfer to a four-year college or university.

6. Over three-fourths of all students (77 percent) indicated that if they were making the choice again, they would enroll at Montgomery College, 9 percent would not enroll there, and 13 percent didn't know if they would enroll there. The largest percentages who would enroll at Montgomery College, if doing it over, were men who expected to complete a degree or certificate program and women who did not expect to do so.

7. About 40 percent of the students believed there would be an advantage if students could enroll at the Rockville and Takoma Park campuses at the same time for part of their classes. Another 20 percent were undecided.

8. About half of all students believed that Montgomery College was giving them just what they thought they needed in terms of what they planned to do later; a slightly smaller percentage of students from "down county" high schools than others shared this belief. Another one-third believed their preparation was good in most ways, but could be better in some ways. While 15 percent of all students did not believe the College was preparing them very well or that the preparation was fair and could be better, these views were expressed by over one-fifth (21 percent) of women from "down county" area high schools.

9. The largest percentages of respondents who believed the College was giving them just what they needed were men who planned to complete a degree or certificate program.

10. Many suggestions were given by students for improving the College. Those related to teaching methods and curriculum seem related to concern for quality and relevancy, particularly more "hands on" practical experiences in occupationally-oriented programs. Suggestions regarding curricular offerings urged some additions and expansions. Effectiveness of instruction and interest in students seemed to be the thrust of suggestions regarding faculty. Relevancy of course requirements to program purpose was the concern of some suggestions, while others related to administrative matters, student activities, and relationships with other colleges or universities.

11. Of several types of programs and services offered primarily in the student personnel service area, counseling services, next to use of the library, had been used by the largest percentages of men and women. Except for tutoring services, the least utilized were job placement services. Students had received the greatest amount of help from the services which they utilized most.

12. The largest percentages of students indicating there were fields of study in which they were interested but which were not offered by the College were men and women students who didn't know if they would complete a credential program at Montgomery College, men who reported they had been in the lowest academic third of their high school class, and women who reported they had been in the top and middle thirds of their high school class. Some fields recommended were already offered by the College, showing that the respondents were not fully aware of the full range of offerings.

13. Recommended offerings included dental hygiene, rescue paramedical aide, physical therapy assistant, library assistant, ornamental horticulture, interior decoration, and auto mechanics (technology), all programs offered by community colleges elsewhere.

14. Most students suggesting Community-Services offerings in which they would be interested on a non-credit basis were those who reported they had been in the lowest third of their high school class and those who did not plan to complete a credential at Montgomery College. Many offerings suggested were already offered in the County by one or more agencies. Largest numbers of persons suggested: (1) auto mechanics, (2) art, (3) psychology, (4) music, (5) ceramics, and (6) current politics. A variety of other less frequently mentioned topics should be explored as possibilities.

15. Eighty-three percent of the students usually get from where they live or work to the College by automobile or other motorized vehicle owned by themselves or family members. More than three-fourths of all students (76 percent) spend less than 30 minutes on the average getting to the campus where they are enrolled.

16. Over one-fourth of all respondents indicated lack of transportation and inconvenient location of campuses as reasons of some importance why more high school classmates and friends did not enroll at Montgomery College. A larger percentage of men (29 percent) than women (23 percent) who do not expect to complete a degree or certificate program at the College and a larger percentage of women (32 percent) than men (23 percent) who do expect to complete a degree or certificate program indicated lack of transportation as a reason of some importance why they believed more classmates and friends did not enroll.

17. When compared with responses of all students, a smaller percentage of men (18 percent) and a larger percentage of women (36 percent) from "down county" high schools indicated lack of transportation as a reason of some importance why they believed more of their classmates and friends did not enroll in Montgomery College. Of men and women who attended a high school in Montgomery County outside the "down county" area, 36 and 27 percent, respectively, believed lack of transportation was a reason of some importance why more fellow high school students did not enroll.

18. Over one-third of all respondents believed lack of information about the College was of some importance why more fellow students and friends did not enroll at Montgomery College.

19. Nearly one-fourth of the "down county" men, and over one-fifth of the women from high schools in Montgomery County elsewhere, indicated they thought a reason of some importance why more classmates and friends did not enroll at Montgomery College was advice from high school counselors not to enroll there. Twenty-eight percent of men from "down county" high schools, 21 percent of men who attended high school elsewhere in the County, and about 15 percent of the women from all high schools indicated they believed advice from high school teachers not to enroll at Montgomery College was of some importance why more of their friends and classmates did not do so.

20. Largest percentages of College students indicated the most important reason they chose Montgomery College was because of: (1) low cost, (2) convenience of location, and (3) presence of courses wanted. Students from "down county" high schools also indicated these reasons.

21. Desire for a better college (76 percent), desire to live away from home (74 percent), and lack of program wanted (65 percent),

in that order, were reasons of some and much importance students gave as to why more classmates and friends did not enroll at Montgomery College.

22. If a campus was to be located closer to home, 39 percent of all students and 39 and 43 percent, respectively, of men and women from "down county" area high schools indicated they would probably attend it. Twenty-nine percent of men from County high schools outside the "down county" area, and 48 percent of the women from those schools would prefer to attend the campus where they are enrolled, compared to 26 and 20 percent, respectively, of men and women from "down county" high schools.

APPENDIX I

TABLE A - Head Count Enrollments By Curriculum Offered By Montgomery College

TABLE B - Head Count Enrollments By Community Service Courses Offered By Montgomery College

TABLE C - Courses and Activities Offered By Department of Adult Education, Montgomery County Public Schools

TABLE A

HEAD COUNT ENROLLMENTS BY CURRICULUM OFFERED BY MONTGOMERY COLLEGE

Curriculum	Rockville			Takoma Park			Off Campus			Total College		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
A. Transfer Programs												
Business Administration	386 (408)*	43 (58)	429 (466)	134 (115)	23 (16)	157 (131)	(1)	(2)	(3)	520 (524)	66 (76)	586 (600)
Cartography	2 (6)	– (2)	2 (8)							2 (6)	– (2)	2 (8)
Community Planning	5 (3)	– (1)	5 (4)							5 (3)	– (1)	5 (4)
Geography	6 (5)	1 (1)	7 (6)							6 (5)	1 (1)	7 (6)
Education												
Elementary	20 (22)	234 (204)	254 (226)	5 (6)	57 (38)	62 (44)	(–)	(1)	(1)	25 (28)	291 (243)	316 (271)
Secondary	57 (52)	56 (56)	113 (108)	19 (18)	13 (8)	32 (26)				76 (70)	69 (64)	145 (134)
Gen. Business	– (2)	2 (4)	2 (6)	2 (–)	4 (1)	6 (1)				2 (8)	6 (5)	8 (7)
Industrial	4 (7)	– (–)	4 (7)	3 (2)	– (–)	3 (2)				7 (9)	– –	7 (9)
Music-Instrumental	37 (33)	18 (17)	55 (50)							37 (33)	18 (17)	55 (50)
Piano	4 (6)	2 (4)	6 (10)							4 (6)	2 (4)	6 (10)
Vocal	6 (6)	9 (10)	15 (16)							6 (6)	9 (10)	15 (16)
Physical	86 (71)	37 (30)	123 (101)							86 (71)	37 (30)	123 (101)
Secretarial	– (–)	5 (4)	5 (4)	– (–)	2 (2)	2 (2)				– (–)	7 (6)	7 (6)
Sub-Total	613 (621)	407 (391)	1020 (1012)	163 (141)	99 (65)	262 (206)	– (1)	– (3)	– (4)	776 (763)	506 (459)	1282 (1222)
Engineering	175 (184)	3 (4)	178 (188)	101 (84)	– (–)	101 (84)				276 (268)	3 (4)	279 (272)

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*Numbers in parentheses denote Spring 1973; others are for Fall 1972.

**Denotes new curriculum beginning Fall, 1973.

TABLE A (Cont.)

HEAD COUNT ENROLLMENTS BY CURRICULUM OFFERED BY MONTGOMERY COLLEGE

	Rockville			Takoma Park			Off Campus			Total College		
Curriculum	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
						A. Transfer Programs (Cont.)						
Fine Arts												
Art	72	148	220	13	27	40				85	175	260
	(73)	(137)	(210)	(19)	(24)	(43)				(92)	(161)	(253)
Music	38	16	54							38	16	54
	([illegible])	(13)	(52)	(2)	(-)	(2)				(41)	(13)	(54)
Sub-Total	110	164	274	13	27	40				123	191	314
	(112)	(150)	(262)	(21)	(24)	(45)				(133)	(174)	(307)
Liberal Arts												
Arts	175	227	402	82	60	142	-	3	3	257	290	547
	(163)	(195)	(358)	(81)	(71)	(152)				(244)	(266)	(510)
Science/Math	59	19	78	21	6	27				80	25	105
	(49)	(18)	(67)	(15)	(4)	(19)				(64)	(22)	(86)
Home Economics	-	20	20	-	3	3				-	23	23
	(-)	(15)	(15)	(-)	(2)	(2)				(-)	(17)	(17)
Pre-Dentistry	29	1	30	18	4	22				47	5	52
	(30)	(2)	(32)	(12)	(-)	(12)				(42)	(2)	(44)
Pre-Law	54	6	60	15	1	16				69	7	76
	(54)	(8)	(62)	(13)	(1)	(14)	(1)	(-)	(1)	(68)	(9)	(77)
Pre-Medicine	82	32	114	44	12	56				126	44	170
	(89)	(34)	(123)	(50)	(13)	(63)				(139)	(47)	(186)
Pre-Optimetry	10	2	12	2	-	2				12	2	14
	(17)	(1)	(18)	(1)	(-)	(1)				(18)	(1)	(19)
Pre-Pharmacy	16	11	27	16	4	20				32	15	47
	(17)	(15)	(32)	(14)	(4)	(18)				(31)	(19)	(50)
Sub-Total	425	318	743	198	90	288	-	3	3	623	411	1034
	(419)	(288)	(707)	(186)	(95)	(281)	(1)	(-)	(1)	(606)	(383)	(989)
Medical Technology	10	16	26	6	6	12	2	-	2	18	22	40
	(8)	(14)	(22)	(8)	(7)	(15)				(16)	(21)	(37)
Theatre-Performance												
TOTAL TRANSFER	1333	908	2241	481	222	703	2	3	5	1816	1133	2949
	(1344)	(847)	(2191)	(440)	(191)	(631)	(2)	(3)	(5)	(1786)	(1041)	(2827)

TABLE A (Cont.)

HEAD COUNT ENROLLMENTS BY CURRICULUM OFFERED
BY MONTGOMERY COLLEGE

Curriculum	Rockville			Takoma Park			Off Campus			Total College		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Tota
B. General Education Programs												
Humanities and/or Social Sciences	1127 (999)	706 (702)	1833 (1701)	223 (227)	258 (302)	481 (529)	1 (3)	2 (3)	3 (6)	1351 (1229)	966 (1007)	2317 (2236
Science and/or Mathematics	233 (205)	64 (66)	297 (271)	37 (29)	20 (16)	57 (45)	1 (1)	- (1)	1 (2)	271 (235)	84 (83)	355 (318
TOTAL GEN. EDUC.	1360 (1204)	770 (768)	2130 (1972)	260 (256)	278 (318)	538 (574)	2 (4)	2 (4)	4 (8)	1622 (1464)	1050 (1090)	2672 (2554
C. Career Programs												
Accounting	20 (34)	11 (15)	31 (49)	(7)	(-)	(7)				20 (41)	11 (15)	31 (56
Allied Health Prof.												
Dental Assisting	- (-)	4 (4)	4 (4)	- (1)	87 (98)	87 (99)	(-)	(1)	(1)	- (1)	91 (103)	91 (103
Dental Cert.	-	-	-							-	-	-
Dental Lab. Tech.	-	-	-	21 (23)	12 (14)	33 (37)				21 (23)	12 (14)	33 (37
#Medical Assistant												
Medical Lab Tech.	1 (-)	- (2)	1 (2)	51 (16)	16 (55)	67 (71)				52 (16)	16 (57)	68 (73
Mental Health Assoc.	1 (-)	1 (2)	2 (2)	13 (12)	43 (46)	56 (58)				14 (12)	44 (48)	5 (60
Nursing	- (-)	5 (11)	5 (11)	16 (12)	284 (254)	300 (266)				16 (12)	289 (265)	305 (277
Radiologic Tech.	2	-	2	16 (15)	40 (39)	56 (54)				18 (15)	40 (39)	58 (54
Sub-Total	4 (-)	10 (17)	14 (17)	117 (79)	482 (506)	599 (585)	(-)	(1)	(1)	121 (79)	492 (524)	613 (603

TABLE A

HEAD COUNT ENROLLMENTS BY CURRICULUM OFFERED BY MONTGOMERY COLLEGE

	Rockville			Takoma Park			Off Campus			Total College		
Curriculum	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
C. Career Programs (Cont.)												
Business Management												
General	22	3	25	19	8	27				41	11	52
	(22)	(3)	(25)	(10)	(5)	(15)				(32)	(8)	(40)
Management	78	14	92	5	2	7	1	-	1	84	16	99
	(65)	(10)	(75)	(6)	(-)	(6)				(71)	(10)	(81)
Marketing	2	1	3							2	1	3
	(3)	(3)	(6)							(3)	(3)	(6)
Insurance & R. Est.	1	-	1							1	-	1
	(1)	(-)	(1)							(1)	(-)	(1)
Sub-Total	103	18	121	24	10	34	1	-	1	128	28	156
	(91)	(16)	(107)	(16)	(5)	(21)				(107)	(21)	(128)
Cartography	9	1	10							9	1	10
	(7)	(1)	(8)							(7)	(1)	(8)
Community Planning	7	3	10	2	-	2				9	3	12
	(6)	(3)	(9)	(1)	(-)	(1)				(7)	(3)	(10)
Geography	-	-	-							-	-	-
	(1)	(2)	(3)							(1)	(2)	(3)
Computer Sc. & Tech.												
Business	97	28	125	36	17	53	1	-	1	134	45	179
	(89)	(29)	(118)	(25)	(10)	(35)				(114)	(39)	(153)
Mathematics	60	12	72	20	9	29				80	21	101
	(53)	(14)	(67)	(19)	(11)	(30)				(72)	(25)	(97)
#Computer Opr. Cert.												
Sub-Total	157	40	197	56	26	82	1	-	1	214	66	280
	(142)	(43)	(185)	(44)	(21)	(65)				(186)	(64)	(250)
Engineering Technologies												
Architecture	73	5	78	2	-	2				75	5	80
	(71)	(6)	(77)	(1)	(-)	(1)				(72)	(6)	(78)
Civil	17	2	19	-	-	-				17	2	19
	(20)	(2)	(22)	(-)	(-)	(-)				(20)	(2)	(22)
Electronic	101	-	101	4	1	5				105	1	106
	(99)	(1)	(100)	(6)	(-)	(6)				(105)	(1)	(106)

TABLE A (Cont.)

HEAD COUNT ENROLLMENTS BY CURRICULUM OFFERED
BY MONTGOMERY COLLEGE

	Rockville			Takoma Park			Off Campus			Total College		
Curriculum	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
C. Career Programs (Cont.)												
Engineering Tech. (Cont.)												
General	28	2	30	-	-	-				28	2	30
	(28)	(-)	(28)							(28)	(-)	(28)
Mechanical	17	-	17	2	-	2				19	-	19
	(20)	(-)	(20)	(3)	(-)	(3)				(23)	(-)	(23)
Sub-Total	236	9	245	8	1	9				244	10	254
	(238)	(9)	(247)	(10)	(-)	(10)				(248)	(9)	(257)
Hospitality Mgmt.												
Food Service	14	7	21							14	7	21
	(16)	(9)	(25)							(16)	(9)	(25)
Hotel/Motel	22	3	25							22	3	25
	(24)	(5)	(29)	(1)	(-)	(1)				(25)	(5)	(30)
Sub-Total	36	10	46							36	10	46
	(40)	(14)	(54)	(1)	(-)	(1)				(41)	(14)	(55)
Instr. Aide Cert.	-	3	3							-	3	3
	(-)	(2)	(2)							(-)	(2)	(2)
Public Service												
Criminal Justice	186	45	231	2	2	4				188	47	235
	(178)	(47)	(225)							(178)	(47)	(225)
Fire Science	47	-	47							47	-	47
	(43)	(-)	(43)	(1)	(-)	(1)	(4)	(-)	(4)	(48)	(-)	(48)
Fire Science Cert.	2	-	2				1	-	1	3	-	3
	(3)	(-)	(3)							(3)	-	(3)
Sub-Total	235	48	283	2	2	4	1	-	1	238	50	288)
	(224)	(49)	(273)	(1)	(-)	(1)	(4)	(-)	(4)	(229)	(49)	(278
Radiation Science	-	-	-	5	1	6				5	1	6
				(6)	(-)	(6)				(6)	(-)	(6)
Recreation Ldrship	70	56	126	-	1	1				70	57	127
	(64)	(61)	(125)	(-)	(1)	(1)				(64)	(62)	(126)
Secretarial												
Executive	-	103	103	3	24	27	-	1	1	3	127	130
	(-)	(77)	(77)	(3)	(23)	(26)				(3)	(100)	(103)

TABLE A (Cont.)

HEAD COUNT ENROLLMENTS BY CURRICULUM OFFERED BY MONTGOMERY COLLEGE

Curriculum	Rockville			Takoma Park			Off Campus			Total College		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
C. Career Programs (Cont.)												
Secretarial (Cont.)												
Legal	- (-)	72 (69)	72 (69)	- (-)	16 (15)	16 (15)				- (-)	88 (84)	88 (84)
Medical	- (-)	29 (17)	29 (17)	- (-)	8 (11)	8 (11)				- (-)	37 (28)	37 (28)
Certificate With Shorthand	- (-)	39 (39)	39 (39)	- (-)	10 (7)	10 (7)				- (-)	49 (46)	49 (46)
Gen. Business	- (-)	2 (-)	2 (-)							- (-)	2 (-)	2 (-)
Sub-Total	- (1)	245 (202)	245 (203)	3 (3)	58 (56)	61 (59)	-	1	1	3 (4)	304 (258)	307 (262)
Visual Communication Tech.												
Art Advertising	75 (73)	72 (79)	147 (152)	2 (2)	2 (1)	4 (3)				77 (75)	74 (80)	151 (155)
Printing Tech.	77 (69)	2 (5)	79 (74)							77 (69)	2 (5)	79 (74)
#Theatre-Technical Sequence												
Sub-Total	152 (142)	74 (84)	226 (226)	2 (2)	2 (1)	4 (3)				154 (144)	76 (85)	230 (229)
TOTAL CAREER	1009 (956)	517 (503)	1526 (1459)	219 (163)	583 (590)	802 (753)	3 (4)	1 (1)	4 (5)	1231 (1123)	1101 (1094)	2332 (2217)
D. Non-Degree Programs												
Early Placement	43 (38)	44 (45)	87 (83)	2 (2)	3 (2)	5 (4)				45 (40)	47 (47)	92 (87)
Post Graduate	18 (15)	19 (12)	37 (37)	5 (8)	2 (5)	7 (13)	-	3	3	18 (23)	22 (17)	44 (50)
Special	896 (906)	960 (985)	1856 (1891)	172 (170)	276 (253)	448 (423)	104 (123)	108 (110)	212 (233)	1172 (1199)	1344 (1348)	2516 (2547)
TOTAL NON-DEGREE	957 (959)	1023 (1042)	1980 (2001)	179 (180)	281 (260)	460 (440)	104 (123)	111 (110)	215 (233)	1235 (1262)	1413 (1412)	2652 (2684)
GRAND TOTAL	4659 (4463)	3218 (3160)	7877 (7623)	1139 (1039)	1364 (1359)	2503 (2398)	111 (133)	117 (118)	228 (251)	5909 (5635)	4699 (4637)	10608 (10272)

Sources: Office of Institutional Research, Montgomery College, OIR-7(R), OIR-7(TP) and OIR-7(OFF C), December 4, 1972 and OIR-20(R), OIR-20(TP) and OIR-20 (OFF C), April 2, 1973.

[*] Numbers in parentheses denote Spring 1973; others are for Fall 1972.

[#] Denotes new curriculum, Fall 1973.

TABLE B

HEAD COUNT ENROLLMENTS BY COMMUNITY SERVICE COURSES OFFERED BY MONTGOMERY COLLEGE

	Rockville				Takoma Park				Totals	
	Fall 1972		Spring 1973		Fall 1972		Spring 1973			
	Number Classes	Enrollment	Number Classes	Enrollment	Number Classes	Enrollment	Number Classes	Enrollment	Number Classes	Enrollment
Agriculture										
Landscape Design I			1	20					1	20
Landscape Design II			1	21					1	21
Indoor Gardening Wkshp. I	1	10	1	25					2	35
Indoor Gardening Wkshp. II	1	15	1	24					2	39
Basic Horse Mgmt. I			1	20					1	20
Basic Horse Mgmt. II			1	16					1	16
Ident. of Rocks and Minerals					1	24	1	21	2	45
Art										
Raku Sect I	1	18	1	16					2	34
Raku Sect II	1	19	1	21					2	40
Basic Watercolor I	1	19	1	19					2	38
Basic Watercolor II	1	15	1	19					2	34
Painting in Watercolor					1	20	1	18	2	38
Painting and Watercolor							1	14	1	14
Winter Watercolor			1	13					1	13
Experiments in Painting	1	10							1	10
Oil Painting for Pleasure					1	16			1	16
Oil Painting							2	42	2	42
Multi-Media Draw.	1	19	2	40					3	59
Contemp. Art Wkshp.	1	20	1	11					2	31
African Art-Cult. & Persp.	1	6							1	6
Ceramics Wkshp. A					1	14			1	14
Ceramics Wkshp. B					1	15			1	15
Poster Art Wkshp.					1	6			1	6
Antique Glass Thru Ages					1	20	1	18	2	38
Acrylic Paint Dyn.			2	39					2	39
Business-Commerce										
Accounting for Non-Acct.			2	38					2	38
Bookkeeping					1	21			1	21
Bookkeeping-Simplified							1	22	1	22
Bookkeeping A							1	5	1	5
Bookkeeping B							1	16	1	16

TABLE A (CONTINUED)

	Rockville				Takoma Park				Totals	
	Fall 1972		Spring 1973		Fall 1972		Spring 1973			
	Number Classes	Enrollment	Number Classes	Enrollment	Number Classes	Enrollment	Number Classes	Enrollment	Number Classes	Enrollment
Business-Commerce (Continued)										
Shorthand Refresher	1	20							1	20
NOAT Typing			1	16					1	16
Personal Typing					1	14			1	14
V.I.P. Typing					2	57			2	57
T.P. Jr. High Typing							1	29	1	29
Shorthand and Business English					1	15	2	27	3	42
Personal Typing A					1	23	2	29	3	52
Personal Typing B					1	23	1	30	2	53
Personal Typing C							2	51	2	51
Personal Typing D							1	27	1	27
Legal Secretarial Pract.					1	6	1	6	2	12
Intro. to Data Processing	1	13							1	13
Basic Keypunching					1	12			1	12
Basic Keypunching A							2	10	2	10
Basic Keypunching B							2	8	2	8
Commercial Law					1	10	1	4	2	14
Commercial Law II							1	4	1	4
Office Opr. and Mgmt.					1	11	1	11	2	22
Principles of Super.					1	20	1	15	2	35
Sensitivity for Mgrs.	1	16							1	16
Supervisory Pract.							1	11	1	11
Management Principles							1	11	1	11
Basic Real Estate	2	69	10	357					12	426
Basic Real Estate Prin.	2	76	9	328	1	39	4	144	16	587
Understand. Real Prop. Invest.	1	41	1	63					2	104
Real Estate Review	1	17			1	13			2	30
Buying a Home or a Headache					1	39	1	44	2	83
Home Buyers and Sellers	1	77	2	184					3	261
Real Prop. Invest.			1	47					1	47
Prin. of Invest. Stocks and Bonds					1	32			1	32
Stock Market			1	49					1	49
Stock Market Investment							1	17	1	17
Stock Mkt. Tech.-Succ. Invest.	1	64	1	49					2	113
Investment Planning							2	69	2	69

TABLE B (CONTINUED)

	Rockville				Takoma Park				Totals	
	Fall 1972		Spring 1973		Fall 1972		Spring 1973			
	Number Classes	Enrollment	Number Classes	Enrollment	Number Classes	Enrollment	Number Classes	Enrollment	Number Classes	Enrollment
Business-Commerce (Continued)										
Your Federal Income Tax					1	29			1	29
Federal Income Tax A							1	23	1	23
Federal Income Tax B							1	22	1	22
Medical Tax Tips					1	9			1	9
Casualty Insurance	1	23	1	17					2	40
Prop. and Casualty Ins.							1	19	1	19
Developmental Education										
Speed Reading I	1	18	2	21					3	39
Speed Reading II	1	19	2	38					3	57
Speed Reading III	1	19	2	20					3	39
Speed Reading IV	1	10	2	39					3	49
Speed Reading V	1	21							1	21
Speed Reading	1	22	1	23					2	45
Reading Skills Dev.	1	9							1	9
How to Study I	1	17	2	36					3	53
How to Study II	1	16	1	16					2	32
How to Study	1	11	1	16					2	27
Speed Reading A					1	20	2	40	3	60
Speed Reading B					1	19	2	33	3	52
Totals	10	162	13	209	2	39	4	73	29	483
Foreign Languages										
Conversation French I					1	15	1	12	2	27
Conversation French II					1	7			1	7
Conversation Hebrew I					1	6	1	14	2	20
Conversation Hebrew II					1	11	1	11	2	22
Conversation Spanish I					1	17	1	15	2	32
Conversation Spanish II					1	15	1	18	2	33
English as a 2nd Language					2	61	2	72	4	133
Spanish as a 2nd Language							1	14	1	14
Introduction to Braille					1	4			1	4
Interpersonal Comm.							1	11	1	11
Health										
Dental Assisting							1	30	1	30
Dental X-Ray							1	30	1	30
Alcohol Abuse			1	17						

TABLE B (CONTINUED)

	Rockville				Takoma Park				Totals	
	Fall 1972		Spring 1973		Fall 1972		Spring 1973			
	Number Classes	Enroll-ment •	Number Classes	Enroll-ment	Number Classes	Enroll-ment	Number Classes	Enroll-ment	Number Classes	Enroll-ment
History-Political Science										
American Women Past & Present	1	16	2	40					3	56
The Emerging Woman	1	25	1	30					2	55
Women Today			1	11					1	11
Election Year Special					1	12			1	12
Md. St. Legislature							1	9	1	9
History of Motion Pictures							1	14	1	14
Home Economics										
Creative Knitting					1	17	1	14	2	31
Creative Stitchery A					1	21			1	21
Creative Stitchery B					1	8			1	8
Fabric Constr. Workshop					1	8	1	19	2	27
Fashion Awareness	1	15	1	20					2	35
Interior Design	2	54					1	13	3	67
Interior Design I			2	63					2	63
Interior Design II			2	54					2	54
Practical Decorating			1	17					1	17
Macrame	1	20	2	40			2	39	5	99
Macrame I					1	19			1	19
Macrame II					1	9			1	9
Literature and Communication										
American Novels Since 1950	1	28	1	17					2	45
Creative Prose			1	14					1	14
Readings in 20th Century Lit.							2	51	2	51
Fict. Female Perspective							1	25	1	25
Sherlock Holmes Sem.							2	32	2	32
Adv. Poetry Workshop	1	10							1	10
Contemp. American Heroship							1	9	1	9
Art of Lit Criticism							1	10	1	10
Creative Writing Workshop	1	19	1	18	1	18	2	37	5	92
The Writing of Plays	1	9							1	9
Pen and Ink Workshop			1	20					1	20
Poetry Workshop			1	10					1	10
Job Opport. Dev. Res. Writing	1	20							1	20
Oral Communication	1	24	2	49	1	17			4	90
Interpersonal Comm.							1	15	1	15
Creative Dramatics for Child					1	3	1	12	2	15
Totals	6	110	7	97	3	38	11	191	27	436

TABLE B (CONTINUED)

	Rockville				Takoma Park				Totals	
	Fall 1972		Spring 1973		Fall 1972		Spring 1973			
	Number Classes	Enrollment	Number Classes	Enrollment	Number Classes	Enrollment	Number Classes	Enrollment	Number Classes	Enrollment
Music										
Recorder Introduction	1	31	1	19					2	50
Recorder I			1	12					1	12
Recorder Ensem.			1	9					1	9
Photography										
Photography	1	40							1	40
Photography IA					1	20	1	17	2	37
Photography IB					1	20	1	23	2	43
Photography IC					1	21	1	28	2	49
Photography IIA							1	11	1	11
Photography IIB							1	9	1	9
Photo Workshop A					1	11	2	34	3	45
Photo Workshop B					1	12	2	36	3	48
Photo Workshop C					1	12	1	18	2	30
Scenic Photo Wkshp. I	1	27	2	59					3	86
Scenic Photo Wkshp. II	1	9	1	30					2	39
Action Photo Wkshp.	1	30	1	30					2	60
Film Prod. Workshop					1	12			1	12
Photography Indoors			2	60					2	60
Physical Education and Recreation										
Rock Climbing	1	19	2	37					3	56
Lifeguard Workshop			1	40					1	40
Hiking and Climbing Wkshp.					1	23			1	23
Camping and Hiking Wkshp.							1	24	1	24
Back Packing and Climb Wkshp.							1	25	1	25
Winter Hiking and Climb							1	16	1	16
Intro. to Dance Therapy					1	21	1	20	2	41
Self Defense					1	31	2	50	3	81
Yoga I-A							2	44	2	44
Yoga I-B							2	45	2	45
Dance and Move. Therapy A							1	18	1	18
Dance and Move. Therapy B							1	18	1	18
Travel Highlights					1	12			1	12

TABLE B (CONTINUED)

	Rockville				Takoma Park				Totals	
	Fall 1972		Spring 1973		Fall 1972		Spring 1973			
	Number Classes	Enrollment	Number Classes	Enrollment	Number Classes	Enrollment	Number Classes	Enrollment	Number Classes	Enrollment
Psychology										
Group Dynamics and Human Behavior	1	18	2	25					3	43
Group Dynamics			1	15					1	15
Personality Assess.	1	18	1	20			2	17	4	38
Sensitivity for Mgrs.			2	29					2	29
Witchcraft I	1	27	2	62					3	89
Witchcraft II	1	24	2	43					3	67
Trade and Technical										
Printing Introduction	1	15							1	15
Technical Report Writing	1	21							1	21
Heating, Refrig. & A/C					1	40			1	40
Automotive Awareness IA					1	40	2	83	3	123
Automotive Awareness IB					1	39	2	56	3	95
Automotive Awareness IC					1	39	2	74	3	113
Automotive Awareness II					1	51			1	51
Automotive Awareness II-A							2	49	2	49
Automotive Awareness II-B							2	54	2	54
Automotive Awareness III-A							2	15	2	15
Automotive Awareness III-B							1	10	1	10
Automotive Awareness III-C							1	19	1	19
Principles of Appliance Repair							1	19	1	19
Intro. to Radio and TV Repair A							1	19	1	19
Intro. to Radio and TV Repair B							1	11	1	11
Miscellaneous										
Planning Freedom Years							1	16	1	16
Law for the Layman			1	25					1	25
Comm. Aides Dev. Pr.			1	17					1	17
Neighborhood Youth Corp			1	9					1	9

Sources: Office of Institutional Research, Montgomery College, OIR-7(R), OIR-7(TP) and OIR-7(OFF C), December 4, 1972 and OIR-20(R), OIR-20(TP) and OIR-20(OFF C), April 2, 1973.

TABLE C

COURSES AND ACTIVITIES OFFERED BY DEPARTMENT OF ADULT EDUCATION
MONTGOMERY COUNTY PUBLIC SCHOOLS

Adult Educ. Classes and Activities	Winter 1973	Spring 1973	Adult Educ. Classes and Activities	Winter 1973	Spring 1973
Adult (Formal School) Education					
Adult Basic Education (Grades 1-6)	X	X	G.E.D. Review (Grades 10-12)	X	X
High School Level Educ. (Grades 7-9)	X	X	G.E.D. Examination (Grades 10-12)	X	X
Art					
Drawing and Composition		X	Water Color and Oils (Beg.-Adv.)		X
Drawing (Beginner)		X	Water Colors	X	X
Drawing (Inter. & Adv.)	X	X	Chinese Painting I	X	
Drawing (Adv.)		X	Chinese Painting II	X	
Croquis	X	X	Chinese Water Color Painting		X
Pastel Drawing	X	X	Acrylic & Oil Painting (Beginner)	X	X
Pastel Portraits (Beginner)	X	X	Acrylic and Oil Painting (Beg. & Adv.)		X
Drawing in Color		X	Acrylic Painting	X	X
Portrait Painting (Beginning)	X		Acrylic Painting & Mixed Media	X	X
Portrait Drawing & Painting (Inter. & Adv.)		X	Japanese Ink Painting		X
			Instant Decoupage		X
Drawing & Painting (all levels)		X	Creating with Decoupage (Beginner)	X	X
Oil Painting (Beginner)	X	X	Advanced Decoupage		X
Oil Painting (Beginning & Inter.)		X	Decoupage: "Your own Bag" (Beg. & Adv.)		X
Contemporary Painting (Beg. & Adv.)	X		Ceramics		X
Speed Painting with Oils (Beginner)		X	Beginning Ceramics	X	
Oil Painting Workshop (Inter. & Adv.)		X	Woodblock Printing	X	X
We're Having a "Paint In" (Inter. & Adv.)	X		Silk Screen (Beg. & Adv.)	X	
			Silk Screen Printing (Beginner)		X
Oil Painting (For Beginners who can't draw a straight line)		X	Batik and Tie Dyeing	X	X
			Sculpturing	X	
Oil Painting (Intermediate)	X		Sculpture for Moderns		X
Oil Painting Workshop	X	X	Thai-Silk Flower Making	X	X
Oil Painting (Advanced)	X		Leaded Stained Glass (Beginner)	X	X

TABLE C

COURSES AND ACTIVITIES OFFERED BY DEPARTMENT OF ADULT EDUCATION
MONTGOMERY COUNTY PUBLIC SCHOOLS
(Continued)

Adult Educ. Classes and Activities	Winter 1973	Spring 1973	Adult Educ. Classes and Activities	Winter 1973	Spring 1973
			Art (Continued)		
Leaded Stained Glass (Adv.)	X	X	Mixed Media	X	
Stained Glass Windows & Lamps		X	Decoupage: The Lacquer Meth. (Beg. & Adv.)		X
Gemstones	X	X	Decoupage Magic		X
Italic Handwriting	X	X	Decoupage Workshop (Advanced)		X
Calligraphy	X	X	Know Your Antique Furniture	X	
Calligraphy (Adv.)	X	X	Antique Jewelry and Basic Gemstone Identification	X	
Gift Boutique	X	X	Glass (Old, Unusual, Ornamental)	X	
Picture Framing for the Home	X	X			
			Business - Office		
Accounting	X	X	Shorthand I (Sem. 1)	X	X
Business English Usage	X	X	Shorthand I (Sem. 2)	X	X
Introduction to Data Processing	X	X	Shorthand I (Sem. 3)		X
Investments & the Stock Market	X	X	Shorthand Refresher	X	X
Practical Business Law		X	Machine Shorthand (Sem. 2)	X	
Real Estate Law	X	X	Machine Shorthand (Sem. 3)		X
Bookkeeping for Businessmen	X		Stenoscript ABC Shorthand	X	X
Practical Business Law for the Small Businessman	X		Typing I (Sem. 1)	X	X
Principles of Programming (Fortran)	X		Typing I (Sem. 2)	X	X
Principles of Programming (Cobol)	X		Typing II	X	X
Systems Design & Analysis	X		Refresher Typing	X	X
			Consumer		
Consumer Affairs		X	Dollar Sense (Do you want a Raise)		X
Home Winemaking		X	Preparing Income Tax Forms		X
Meat Buying		X	Understanding Social Security	X	

TABLE C

COURSES AND ACTIVITIES OFFERED BY DEPARTMENT OF ADULT EDUCATION
MONTGOMERY COUNTY PUBLIC SCHOOLS
(Continued)

Adult Educ. Classes and Activities	Winter 1973	Spring 1973	Adult Educ. Classes and Activities	Winter 1973	Spring 1973
			English Language		
Creative Writing Workshop	X	X	English as a Second Language (Adv.)	X	X
Communicating Effectively		X	Rapid Reading	X	X
Effective Speech	X	X	Vocabulary Building	X	X
English as a Second Language (Beg.)	X	X	Writing for Children	X	X
English as a Second Language (Inter.)	X	X			
			Family Education		
Toy Talk		X	Infant Education	X	
Family Communication Skills	X	X	Parents and Teens	X	
Child Development	X	X			
			Foreign Language		
French I (Semester 1)	X	X	German II (Semester 3)		X
French I (Semester 2)	X	X	German III (Semester 2)	X	
French I (Semester 3)	X	X	German III (Semester 3)		X
French II (Semester 2)	X		Advanced German (Semester 2)	X	
French II (Semester 3)		X	Advanced German (Semester 3)		X
French III (Semester 2)	X		Deutsches Drama		X
French III (Semester 3)		X	Deutsches Drama (Semister 2)	X	
French IV (Semester 2)	X		Conversational Italian I (Sem. 1)	X	
French IV (Semester 3)		X	Conversational Italian I (Sem. 2)	X	
French V (Semester 2)	X		Conversational Italian I (Sem. 3)		X
French V (Semester 3)		X	Conversational Italian II (Sem. 1)	X	
German I (Semester 2)	X		Conversational Italian II (Sem. 3)		X
German I (Semester 3)		X	Conversational Italian II (Sem. 2)	X	
German II (Semester 2)	X		Conversational Italian III (Sem. 3)		X

TABLE C

COURSES AND ACTIVITIES OFFERED BY DEPARTMENT OF ADULT EDUCATION
MONTGOMERY COUNTY PUBLIC SCHOOLS
(Continued)

Adult Educ. Classes and Activities	Winter 1973	Spring 1973	Adult Educ. Classes and Activities	Winter 1973	Spring 1973
Conversational Italian III (Sem. 2)	X		Spanish V (Sem. 2)	X	
Spanish I (Sem. 1)	X	X	Spanish V (Sem. 3)		X
Spanish I (Sem. 2)	X	X	Russian I (Sem. 2)	X	
Spanish I (Sem. 3)	X	X	Russian I (Sem. 3)		X
Spanish II (Sem. 2)	X		Russian II (Sem. 2)	X	
Spanish II (Sem. 3)		X	Russian II (Sem. 3)		X
Spanish III (Sem. 1)	X		Esperanto: International Language	X	
Spanish III (Sem. 2)		X	Modern Greek (Sem. 1)	X	
			Modern Greek (Sem. 2)	X	
			Handicapped		
Braile (Beg.)	X		Manual Communications (Adv.)		X
Braille (Inter.)	X	X	Lip Reading		X
Manual Communications (Beg.)	X	X	Sign English	X	
			Health		
Survey of Pharmacology	X	X			
			Home Economics		
Intro to Clothing Construction I	X	X	Fitting Clinic	X	X
Clothing Construction II	X	X	Fitting Clothes is Easy		X
Clothing Construction III		X	Dressmaking I	X	
Clothing Construction (Basic 100)	X	X	Dressmaking II		X
Clothing Construction (Basic 200)	X	X	Alterations	X	
Clothing Construction (Inter. 100)	X	X	Couturiere Workshop	X	X
Children's Clothing		X	Pattern Adjustments		X
English Riding Jacket	X		Dress Design & Pattern Making I	X	X
Sportswear		X	Dress Design & Pattern Making II	X	X

TABLE C

COURSES AND ACTIVITIES OFFERED BY DEPARTMENT OF ADULT EDUCATION
MONTGOMERY COUNTY PUBLIC SCHOOLS
(Continued)

Adult Educ. Classes and Activities	Winter 1973	Spring 1973	Adult Educ. Classes and Activities	Winter 1973	Spring 1973
Home Economics (Continued)					
Dress Design & Pattern Making III	X	X	Furniture Refinishing	X	X
Tailoring	X		Furniture Reupholstering	X	X
Shorts-Long Pants		X	Interior Decoration	X	X
Men's Wear	X		Drapery Making	X	X
30's and 40's Styles in Seersucker		X	Slip Covers	X	X
Men's Sport Coat & Slacks	X		Rugs (Braided)	X	X
Millinery	X	X	Hooked Rug Making	X	X
Lingerie Sewing	X	X	Wigs and Vogues	X	X
Sewing with Knits I	X		Wigs and Vogues (Adv.)		X
Sewing with Knits II	X		Baking with Whole Grain Flour		X
Sewing with Knits		X	Chinese Cooking I	X	X
Knit Sportswear	X		Chinese Cooking II	X	X
Knit Fabrics Techniques		X	Easy Entertaining I	X	X
Pantsuits in Knits	X	X	Easy Entertaining II	X	X
Knit Workshop I	X	X	Easy Entertaining III		X
Knit Workshop II	X	X	French Cuisine	X	X
Canvas Embroidery I	X		French Cuisine Plus	X	X
Creative Needlepoint	X	X	Gourmet Foods	X	X
Creative Needlepoint I		X	Gourmet Cooking	X	
Creative Crewel		X	Party Foods	X	X
Crewel Embroidery I	X		Party Foods International		X
Crewel Embroidery & Creative Stitchery	X	X	Indian Cookurry	X	
Crocheting I	X	X	Indian Cookurry II	X	
Crocheting II	X	X	Jewish Cooking	X	
Knitting I	X	X			
Knitting II	X				
Knitting I & II	X	X			

TABLE C

COURSES AND ACTIVITIES OFFERED BY DEPARTMENT OF ADULT EDUCATION
MONTGOMERY COUNTY PUBLIC SCHOOLS
(Continued)

Adult Educ. Classes and Activities	Winter 1973	Spring 1973	Adult Educ. Classes and Activities	Winter 1973	Spring 1973
			Industrial Arts		
Automotives	X	X	Metals: Jewelry and Art	X	X
Electronics for the Layman		X	Woodworking (Beg.)	X	X
Home Maintenance	X	X	Woodworking (Adv.)	X	X
			Mathematics		
Algebra	X	X	Modern Mathematics for Parents	X	
Plane Geometry		X			
			Mildly Retarded		
Beginning Typing	X	X			
			Miscellaneous		
Lets Take a Walk (Nature)		X	History of Motion Pictures		X
Lets Take a Bird Walk		X	Landscape Maintenance		X
Principles of Safe Sailing	X	X	Private Pilot Ground School	X	
Safe Boating	X	X	Woodcarving & Whittling	X	
Boating Safety & Seamanship	X	X	Foreign Policy Discussion Program		
T.V. Production Workshop		X	(8 topics)	X	
T.V. Programming Workshop	X		9 Local Educational Tours	X	X
Elementary Astrology	X	X	6 Film Lecture Series		X
Intermediate Astrology	X	X	13 Film Lecture Series	X	
Advanced Astrology		X	Educational Tours Abroad		
Bon Voyage (Travel in Europe)	X	X	Germany	X	X
Parliamentary Procedures		X	Hawaii	X	X
			Athens-Holy Land	X	

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COURSES AND ACTIVITIES OFFERED BY DEPARTMENT OF ADULT EDUCATION
MONTGOMERY COUNTY PUBLIC SCHOOLS
(Continued)

Adult Educ. Classes and Activities	Winter 1973	Spring 1973	Adult Educ. Classes and Activities	Winter 1973	Spring 1973
			Music		
Music Appreciation & Lit. (Beg.)	X	X	Group Piano for Adults	X	X
Music Appreciation & Lit. (Inter.)	X	X	Vocal Technique & Vocal Repertoire	X	X
Music Appreciation & Lit. (Adv.)		X	Symphony Orchestra	X	
Choral Ensemble & English Handbell Ringing	X	X			
			Psychology		
Handwriting Analysis	X	X	Managing Children's Behavior	X	
Child Management		X			
			Social Science		
Americanization	X	X	The Social Seminar (Drug Educ.)		X
Man: A Course of Study	X	X	Sociobiology of Man	X	
20th Century Problems of Man		X			
			Vocational		
Blueprint Reading		X	Refrigeration III		X
Electricity I	X	X	Welding	X	X
Electronics I	X	X	Building Trades Blueprint Reading I	X	
Electronic Test Equipment	X	X			

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